MARINE RECORD

ESTABLISHED 1878.

VOL. XXIII, No. 26. CLEVELAND---JUNE 28, 1900---CHICAGO. $2.00 Per Year. 5c. Single Copy

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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FROM THE LAKES TO THE GULF.

At a meeting of the Western Society of Engineers, held a few days ago, Mr. Jas. A. Seddon read a paper entitled "Reservoirs and the Control of the Lower Mississippi," in which the flood protection of the river was outlined and estimates given as to the future requirements of the lower part of the river. The discussion of the paper calculated to develop opinion as to the practicability of a navigable route from the Great Lakes, by way of the Chicago drainage canal and the Mississippi river and tributaries, to the Gulf of Mexico. The principal exponent of this feature of the meeting was Mr. Lyman E. Cooley, who advocated a 20-foot channel from the lakes to Cairo, declaring that such was the policy of the government of Illinois when the drainage act was passed in 1889. He estimated the entire cost at $80,000,000, of which the Sanitary District of Chicago had already expended $35,000,000 and $15,000,000 more would probably be required to complete their works to the full capacity; $8,000,000 more will be required on the eight miles in the vicinity of Joliet, which it is thought the state of Illinois may be induced to undertake. This left for the United States government $22,000,000 for a waterway over the distance of 320 miles. Fifty-four miles of this is a plain slack water proposition and 227 miles simply a question of increased flow and hydraulic dredging. A dam was proposed near Alton, and, if necessary, a short canal from there to St. Louis harbor. Mr. Cooley proposes to construct a dam in the bluff gorge above Commerce, about 140 miles below St. Louis and 50 miles above Cairo. The effect of this dam would be to take out about half of the low water slope of the Mississippi river, which is now excessive; with this reduction of slope and an addition of 50 per cent. to the low water volume at St Louis provided by the Chicago canals he considered that it would be practicable to obtain 20 ft. of water at all stages between St. Louis and Commerce, and that a slack water system could be extended to Commerce.

OUR COAL TRADE.

As shown by the Bureau of Statistics of the Treasury Department in the April Monthly Summary of Commerce and Finance, the export trade is assuming an importance to the coal producers which proves the fact this country is the world's largest producer. The exportations of coal as shown for the ten months ending with April were almost 50 per cent. larger than for same months of the preceding fiscal year. The Black Diamond, Chicago and New York, gets the figures together and shows that this is the first time that this country has a larger production than Great Britain, and from the present outlook will continue. Charters of vessels have recently been made to transport our coal to St. Petersburg, Stockholm, as well as Italian, French and German ports. That the cost to consumers in foreign countries has largely increased is shown by the fact that the railroad companies in Great Britain are reported as paying fifty per cent. more for their coal than in previous years, and the quality of the coal is so inferior as to require about 100 per cent. more fuel to do the amount of work required of them and which the coal formerly used by them furnished. In Germany it is reported that the amount of coal being produced has compelled the producers to notify the several manufacturing establishments, which they have been furnishing, that their supply would be materially lessened. During the last thirty years the increase of coal produced in Great Britain was ninety-seven per cent., Germany 266 per cent., while the United States increased 533 per cent—and while the cost of production and prices of coal show a falling off in this country, the opposite is the case in European coal. There is no doubt in time this country will supply the larger part of the coal needed by foreign industrial countries which until now have been depending upon the British output.

ASTRONOMICAL DATA FOR JULY.

Astronomical data for July, 1900, furnished the MARINE RECORD by the Washburn observatory: Mercury and Venus are both evening stars at the beginning of the month, but the former is not so favorably situated for observation as at some seasons, and after reaching greatest elongation east July 3, will recede towards inferior conjunction. Venus is reduced to a thin crescent and has been diminishing rapidly in brilliancy. The planet passes through inferior conjunction July 8, after which it will become more and more brilliant as a morning star. Mars rises in the northeast from after midnight and is the bright, ruddy star of the latter morning sky. Jupiter is still in the bright constellation, the Scorpion, and is near the meridian far south in the middle and early evening. Saturn is the bright planet low in the southeastern sky reaching the meridian in the late evening. The times of sunrise and sunset for the month at Milwaukee, are as follows:

	SUNRISE.	SUNSET.
July 1	4:16	7:34
July 11	4:22	7:31
July 21	4:31	7:24
July 31	4:41	7:14

The times of the moon's phases are:

First quarter	July 4,	6:14 p. m.
Full moon	July 12,	7:22 a. m.
Third quarter	July 18,	11:31 p. m.
New Moon	July 26,	7:43 a. m.

The principal fixed stars visible during the month are:

To the west in the evening hours, Arcturus, Spica; near the meridian, Antares; to the east, Vega and Altair.

FRITDJOF NANSEN is planning another expedition for the coming summer. It will be a polar trip this time, but, as he describes it in Petermann's Mitheilung, has for its object an exact physical and biological examination of the Norwegian sea in all its depths between Norway, Iceland, Jan Mayen and Spitsbergen. The temperature and specific gravity of the water will be specially studied. A new steamer has been built for this expedition.

THE Navy Department has issued a circular calling for proposals for supplying armor, the bids to be submitted August 10. The circular calls for 2,309 tons of class A armor, face hardened, of the best quality and subject to ballistic test. It also calls for 3,600 tons of class B armor, of about the present quality, and for 1,100 tons of the lowest grade of class C armor, not face hardened. No time limit for deliveries is fixed by the circular, but bidders are invited to submit propositions on the understanding that early delivery will figure in the awards.

GREAT ATLANTIC LINER.

Many popular writers have endeavored to convey an impression of the magnitude of the great steamship, Oceanic, and her equipment by instituting comparisons with familiar objects. Thus, it is shown that her ordinary population is upward of two thousand persons; that, set up on land, her steel timbers would provide the frame work of dwellings for all of them; that her plates would surround the town with a solid wall five feet high and eight miles in length; that her bunkers would supply all the coal required by the community for two years; that her stores would stock all its shops; that her electric plant would light all its streets, and that her engines would drive machinery sufficient to employ all the inhabitants.

While data of this kind is interesting, it falls short of accomplishing its purpose, and it remained for a Frenchman to present a graphic illustration that would make the landsman comprehend the immensity of the great Atlantic liner. The artist of La Nature has conceived the idea of placing the Oceanic in Rue Royale, Paris, showing the big ship between two rows of imposing buildings in the French capital.

The Oceanic is the biggest steamship in the world, being 50 feet longer than any other vessel afloat. Her total weight including cargo exceeds 25,000 tons, and her equipment is the most complete that modern engineering could devise. It requires 500 tons of coal daily to feed the furnaces under the boilers in which steam is raised for the operation of the immense engines that have been the wonder of all who have witnessed them in operation. A popular writer says: "As a pure display of power there is nothing in any other mechanism to compare with the operation of these engines." The crew numbers 500 men, and 200 of these are employed in the furnace room.

The Oceanic is steered by means of two machines, as no wheel would be able to move her rudder; and for additional reason that all seamen on board could not control it. The rudder weighs 53 tons. The two screws, of maganese bronze, weigh 30 tons each, and cost $36,000. The great shaft that moves each screw is constructed in nine sections, and each section weighs 24 tons. Great buckles of steel bent to fit over the shaft, with bolt-holes and bolts all at hand, are ready to repair a break.

The Oceanic is fitted in keeping with her commanding position, and every convenience is to be had by the 1,500 passengers whom she can carry each trip. The liner represents an investment of $4,500,000.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report Eastern freights as follows:

The heavy advance in grain prices, carrying wheat to a figure at which all further export business appears stopped and which has, to a moderate extent, been shared in by better figures demanded for maize, has very adversely affected our freight market, especially since deal freights from the Provinces have lost their snap, and further charters can only be effected at quite a reduction from figures ruling the preceding week. The temporary absence of demand for grain tonnage has been taken advantage of by shippers of coal, some fixtures of which article are reported on our market. The enquiry for time boats is unimportant, but the freight situation in the Gulf continues favoring owners, as in fixtures for timber and general cargo they were enabled to secure rates unchanged from the top ruling the previous week.

Chartering of sail tonnage has of necessity been rather curtailed during the past week, in consequence of the continued scarcity of desirable vessels. Rates, however, as our subjoined list of charters will prove, show no important change, with the exception of case oil to Japan—a charter of a rather old vessel being reported at 21c. for that country.

DETROIT.

Special Correspondence to the Marine Record.

The gas propelled yacht Lady Frances 30 tons, was registered here this week. Her home port is Boston Mass.

The lightkeeper reports that the 25 foot spar buoy, red and black horizontal stripes, which marked the dividing point of the north and south channels of the St. Clair river, has been carried away. It will be replaced as soon as possible.

The report that the Donnelly Dredging Co., of Buffalo has already begun work at the Lime Kilns Crossing is denied from Amherstburg. It is said that no work whatever is being done at the crossing, the blasting and dredging outfits not having arrived.

At some of the lake ports vessel captains are making objections to filling out the supplementary manifests showing an itemized cargo list, including all freight taken on or discharged at intermediate points. It is claimed that the blanks are useless and only a waste of time.

Capt. John C. Sterling, a well-known vessel master, is dead at his home in Marine City, aged 42 years. Capt. Sterling had been ill for two years. He was a prominent Mason, Oddfellow, Knight of Pythias, Maccabee and Forrester, and a member of the Shipmasters' Association.

Secretary Harry C. Barter of the International Longshoremen's Association has returned to his home in Detroit and resumed work as a longshoreman. Mr. Barter said that he would never again organize a union of longshoremen. He insists that overwork and ill health have forced him to resign.

A report has been in circulation that the Craig Ship Building Co. was about to become a part of the shipbuilding trust. Capt. John Craig says the Craig Ship Building Co. will not enter any trust. "No stock deal goes with us," said he. "If anybody wants the plant, they can have it by paying our price in hard cash."

The steel steamer Simon J. Murphy was launched at Wyandotte at 3 o'clock on Saturday afternoon. Fully 1,000 people went down the river to take in the sight on the steamer Sapho, among them being the owners of the boat, Eddy Brothers, of Bay City, and officers of the shipbuilding company. The Murphy is a duplicate in almost everything of the Angeline and Admiral, turned out from the same yards. The dimensions are 451 feet length, 51 feet beam, and 28 feet depth. The boilers and engines will be put in at the Orleans street yard, and the craft will be ready for service in thirty days.

The tow barge Aurora passed here for Marine City on Tuesday, for Toledo, to load coal for Lake Superior. She is probably the largest wooden barge on the lakes, and has a capacity of 3,500 tons. The Aurora was originally a steamer, but was burned on Lake Erie in 1898. She was brought here and rebuilt for Stephenson and others, of Detroit, at an expense of $50,000. While the Aurora was at the ship yard, undergoing the change that would make her a large steel tow barge, the Aurania, which the Aurora had in tow at the time she burned, was transformed into a steamer and now plies the lakes under her own power.

The light ship No. 55, which has been stationed for some years on Simmons' reef, is to be moved to Lansing Shoal, according to the advices received from the Light-House Board. Officers of the Lake Carriers' Association have asked the Light-House Board for this improvement for two years. Vessel men in the Escanaba trade have realized for a long time the uselessness of a lightship on Simmons' reef and the need of one on Lansing shoal. Few boats pass near enough to Simmons' reef to make that especially dangerous, and besides, most of the boats pass closer to White shoal, which has a lightship with a fog whistle. On the other hand, Lansing shoal, which has been marked only by a spar buoy, is at the turning point in the course for boats coming from Escanaba and ports in that direction. It is believed that this system of lighting will mark the channel ever so much better than it has been for years.

As an evidence of progress in western engineering, it may be noted that the city engineer, of Chicago, recently placed with the Bethlehem Steel Co. an order for a hollow forged shaft to replace a breakdown in the North Side pumping station at that city, The new shaft, which measured 13 feet 8½ inches in length, 19 inches in diameter and weighed close to 10,000 pounds, was booked on May 30, and, under special emergency instructions, was hollow-forged, annealed and rough-machined in time to go forward June 9. Many of the power stations in Chicago and other western cities are equipped with shafts of this description, but this is the first time a hollow forging has been specified for water-works engines in that section of the country. The remarkably short time required by the Bethlehem plant for the production of such a shaft is worthy of note, but the manufacturers claim that their complete facilities enable them to meet just such emergencies, in addition to the large volume of general business which constitutes their regular output.

CHICAGO.

Special Correspondence to the Marine Record.

Good business is done daily by the steamers running on the drainage canal.

Grain charters are steady at 2c. on corn to Lake Erie ports and 1½c. to Port Huron.

The steamer Robert W. E. Bunsen, 5,181 gross, and 4,012 net tons, has been registered here this week.

The whaleback steamer Christopher Columbus, of the Goodrich Transportation Co., is carrying large numbers of excursionists daily to Milwaukee and return.

About 1,000,000 bushels of corn was placed for shipment this week. Three Rockefeller boats take some 400,000 bushels of it. For next week's loading there was not much call for tonnage.

Extreme regret was expressed here among marine men upon the announcement of the death of Capt. William Young, at Vermillion, O. He had many friends at this port and was held in high esteem by all who knew him.

The steamer H. Luella Worthington, when going up the south branch of the river Monday afternoon, collided with a steam canal boat laying outside another canal boat at the Rock Island elevator dock. The stern of the canal boat was crushed in and one of her shafts damaged.

The Williams Line steamer Darius Cole does not come up to expectations as to her speed. She is scheduled to make the trip between Chicago and South Haven, a distance of nearly 80 miles from dock to dock, in 5 hours. Her running time averages about 6½ hours, or rather less than 13 miles per hour.

The engineering department, the city of Chicago and the Sanitary District are of one mind as to the need of improving the Chicago river and are co-operating heartily to that end, and large sums are appropriated and are being expended judiciously by each for the object in view. The interests of navigation are not only being protected, but are being advanced practically sooner than could be hoped for in the usual course.

The Graham & Morton steamers City of Chicago and City of Milwaukee are doing a large excursion business. The company donated their steamer City of Louisville to the Salvation Army last Saturday for an excursion to Waukegan. The steamer was crowded by mothers and children of the poorer classes of Chicago who were cared for and provided with food and refreshments by the members of the Army. The excursion was much enjoyed by all.

The first loss of life for the passenger season occurred on Wednesday, when an unknown man fell or jumped overboard from the Goodrich Liner Virginia when that steamer was five miles north of this port on her way from Milwaukee. The accident was witnessed by the engineer, who reversed the engine a moment before he received order from Capt. Stines, who had been notified of the accident by another passenger. A life-boat was manned, but after the search had been carried on for half an hour unsuccessfully the Virginia continued on her way. Nothing was left on the boat to identify the man.

The current in the Chicago river Sunday was more rapid even than usual, and vessel and tugmen were sure the bear trap dam had been lowered another notch. The wind was lighter than for several days' yet the stage of water in the main river, from Rush street to Lake street, was a full foot lower than on Friday, and in the south branch was one foot to two feet two inches lower. At Mud lake the greatest decline was shown. The water at Washington street tunnel was a little better than in the draws of any of the bridges south of it, but deep craft could not have got through the south branch at all. Even in the main river, any craft drawing seventeen feet of water would have grounded.

Ralph F. Bogle, assistant general Western agent of the Anchor Line, died on Tuesday, of Bright's disease at Delafield, Wis , where he had gone several months ago hoping to benefit his health. Mr. Bogle had been in the employ of the Anchor Line for twenty years, entering its service at Philadelphia and later being transferred to Erie. Nine years ago he came to Chicago as assistant Western agent. About three months ago Mr. Bogle's heath began to fail him and he was given six months salary in advance and told to go and recover his health. Mr. Bogle was held in the highest esteem by his fellow employes and by all with whom he had business dealings. He was thirty nine years of age and leaves a wife and four children. Interment will be at Beverly, N. J.

The Lumber Manufacturers' Association of Lake Superior, the new combine, held a second meeting at Ashland and decided to maintain present high prices, established at a previous meeting, indefinitely. There is no buying of lumber by Eastern wholesalers, and the market is very dull. There is a considerable shipment by water to the East, however, of last year's cut, and some of the early cut of this season, sold before the dull times came on. The result of the meeting may not be fully known for several days yet. The shippers say that the strongest obstacle that the manufacturers have to overcome is the fact that some of the stocks which were bought in this market last winter at top prices are offered for resale right on the dock. It is not said that the lumber is offered for less than the price paid, but there is a fear in lumber circles that such may be the result. The result of a few resales at a figure below the prices quoted by the manufacturers would, of course, have an important bearing on the situation.

CLEVELAND.

Special Correspondence to The Marine Record.

Mr. John C. Fitzpatrick, now of Buffalo, visited here this week.

The new steamers W. P. Palmer and Harvard will load cargoes this week.

The William P. Palmer, 2,293 gross and 1,609 net tons, is registered from Cleveland this week.

Coal shippers to the head of Lake Superior are making a great effort to establish the rate at 40 cents, and the vesselmen are making a hard fight to hold it at 50 cents.

The annual meeting of the American Ship Building Co. will be held July 25. A quarterly dividend of 1¾ per cent., payable July 16, was declared this week at a meeting of the executive committee.

It is understood that the Rockefeller interests in the American Ship Building Co., which amounts to about $1,000,000, is to be represented in the board of directors by L. M. Bowers and J. A. McGean and that Mr. Bowers is booked for the executive board.

Coal shippers to the head of Lake Superior admit that they are unable to get any tonnage for less than 50 cents. There is not much tonnage on the market that will be ready to load this week, as a number of vessels were shifted and the feeling is firmer, if anything, than it has been at any time during the past few days.

It is reported that the Hawgood Transit Company had contracted with the Craig Ship Building Company, of Toledo, for a new steel steamer of Welland canal size. The new boat will be a sister ship of the steamer Eureka, which is the first of that type to be built for the Hawgoods. This well known firm is rapidly acquiring a considerable fleet of Welland sized boats.

The Rockefeller fleets remain tied up and in the past week there has been the first official intimation on the subject in a public way. The statement is made that the Rockefeller baots (Bessemer Steamship Co.) will not be permitted to carry a ton of ore below the contract rate of $1.25 from the head of the lake. This decision is made, it is said, in the interest of vessels, mines and furnaces, in view of the very large proportion of this year's ore covered on that basis.

The freight market shows no change as to the movement of ore. Boats are ahead on their movement, having something like 1,500,000 tons now down more than they had a year ago, and the figures when gathered may show even more than that. In view of the fact that the business outlook does not seem to demand any more ore this year than was shipped down the lakes last year, the prospect for any immediate demand for ore tonnage is not bright.

The Lorain Coal & Dock Co., Cleveland, O., sent out the following notice to the trade on June 1st: "We beg to advise that The Lorain Coal & Dock Co., succeeded, on April 1st, 1900, to the business of the Pittsburg & Wheeling Coal Co. The new company respectfully solicits and hopes to receive a continuance of the patronage so long extended to the Pittsburg & Wheeling Coal Co., and will take pleasnre in giving prompt and careful attention to all business placed in its hands."

Capt. John Mitchell closed a contract this week with the American Ship Building Co. for a 6,000 ton steamer, which will be ready for service at the opening of navigation next spring. The new boat will be a sister ship of the steamer W. E. Reis, which is somewhat larger than the Hanna and Frick. The new boat will have triple expansion engines and Scotch type boilers. This is the first of the contracts for the coming winter's work, with the exception of the lake and ocean steamers of St. Lawrence canal type.

On Tuesday night the steamer Douglass Houghton came into port, light, from Conneaut, and went to the Cuddy-Mullen slip to load coal. As she was going to her berth she came in contact with the steamer J. E. Mills and rammed her sharply. The Mills was struck a hard blow forward and was cut through. It was at first thought necessary to take her to dry-dock, but it was found that if such were attempted the Mills would probably sink on the way. Accordingly she was listed and was repaired where she lay. The Houghton was not damaged.

There is every reason to believe that the advisability of establishing a local inspection district at Toledo will be considered. Toledo is a growing marine city, yet she has never had steamboat inspectors of her own, vessels needing inspection of hulls and boilers at that port being examined by the local inspectors stationed at Cleveland. Toledo is in the ninth inspection district, which has only two locals on the lakes, at Buffalo and at Cleveland. The inspectors at these ports have been compelled to look after all the boats on Lake Erie and adjacent waters and the appointment of an office at Toledo has long been urged.

Mr. Robert Logan, who is superintending the building of the American Steamship Co.'s vessels for the owners, returned from Bay City, where the steamer William Edenborn was launched Wednesday. The new boat is 498 feet over all, 478 feet keel, 52 feet beam, and 30 feet molded depth. She has a quadruple expansion engine, 16½, 25, 38½ and 60-inch, with a stroke of 40 inches. She has a registered tonnage of 5,500 and will carry 9,000 tons of ore on a draft of 20 feet. Her speed is placed at 12 miles an hour when loaded and 13 miles an hour light. She hails from Duluth and will leave that port as soon as she is ready to load, which will be in a week or ten days.

The schooners Marion Page and Charles Foster, owned by Capt. James Corrigan, and the schooners Moonlight and F. A. Georger of the Gilchrist fleet, which were chartered by the Atlantic Transportation Co. and taken to the coast a year ago last fall, have returned to the lakes. They reached Port Colborne on Tuesday, where they were picked up by the tug Charles F. Dunbar. The Georger and Moonlight were taken to Erie, where they will load coal, and the Page and Foster will be brought here. Capt. Corrigan bought the last two named vessels while they were on the coast. The schooner Iron City, which was bought by Tonawanda parties, was also brought back from the coast.

A number of Cleveland marine men went to Vermillion to attend the funeral of Captain William Young, one of the best known captains on the lakes. Captain Young has sailed on the lakes for forty years. He commenced back in the old days of the small sailing craft, and followed them on down to the present day. He sailed with the late Capt. Philip Minch most of the time, and until he retired was in the employ of the company which bears Captain Minch's name. Two years ago Captain Young retired from the lakes and had been living since at Vermillion. About ten days ago his daughter died in this city and he came here to attend her funeral. At that time he caught cold, which developed into pneumonia, of which he died on Saturday.

While offerings of ore tonnage are light there is no rush for boats and the demand for wild tonnage is not great enough to force rates up. Shippers are getting a few small carriers, but the amount of wild ore that is being moved is very small. There is a little more inquiry for lumber tonnage but the rates offered are not as good as the figures that are being paid on ore, and a large number of regular lumber carriers are still in the trade. No more Rockefeller vessels have been laid up, and the boats that are now in commission will probably be kept going. The grain reports for the week ending June 23, which were issued Tuesday, show among other things, that the amount of wheat in store at Duluth was 12,413,872 bushels, an increase for the week of 436,484 bushels. The stocks at the end of the week were about twice as large as for the same week one year ago, when there were 6,082,782 bushels, while the increase for the corresponding week last year was only 55,364 bushels.

DULUTH—SUPERIOR.

Special Correspondence to The Marine Record.

The market is strong at 2¼ cents on wheat, with shippers taking all the tonnage offered at that rate. On a few small jags 2½ cents has been paid.

The movement of grain seems to be picking up. Tonnage is in better demand and all that were offered on the market was placed. The news that the movement of grain had increased had the immediate effect of quickening the demand for tonnage out of Chicago. The outlook in this direction is encouraging. No lumber is being shipped, and owners using their boats in other trades, do not seem to be anxious about their employment in the trade to which they were allotted early in the season.

Judge Lochren has filed a decree in the libel suit of Cody & Addis against the tug E. T. Carrington, and the case is dismissed. The libellants brought suit to recover about $8,000 from the Carrington, the alleged value of a quantity of supplies they were shipping to their lumber camps, but which were lost en route. The tug was towing a scow in which the goods were carried, but before arriving at its destination a storm arose which resulted in the breaking of the tow line and the loss of both scow and supplies. The company charged the managers and officers of the Carrington with being responsible for the accident, by not exercising proper care. The case of the Union Towing and Wrecking Company vs. Cody & Addis, growing out of the same accident, for the value of the scow Bill Beeman, belonging to the libellants, was continued by stipulation.

Lumber dealers predict higher prices based on the shortage of the supply. The shortage is ascribed to the forest fires and the drought in the lumber-producing sections of the northwest. The shortage of December 1, 1899, as compared with the same date in 1898, was 766,000,000 feet; as compared with the same date in 1897, was 1,187,000,000; and with the same date in 1895, was 1,452,000,000 feet, showing a large ratio of decrease in product. It was expected, on account of advanced values, that the production for 1900 would overcome a large part of this shortage for the present season by the stimulation of log output, but because of unfavorable logging conditions there has resulted an additional shortage of log production. Lack of snow in the lumber districts seriously interfered with the hauling of logs to the river bank, and low water in the rivers has prevented the delivery to the mills of much of the timber sledded to the rivers. There is no liklihood of relief in this respect as the season of floods is past. Added to the shrinkage in supply are the losses of millions of feet by forest fires. The prices of all grades of lumber are now from two to three times what they were three years ago. No. 5 boards are selling at $8 per thousand: No. 4 at $12; No. 3 at $14, and log run at from $15 to $21 per thousand. And there is no present indication that the prices will decline for some time to come. One of the local lumber dealers says: "The demand for our lumber from the east has fallen off to quite an extent, but the demand from the west is picking up and large quantities are being shipped there as fast as it can be turned out by the mills. The demand from the west, at present, equals the falling off we have had from the eastern buyers. This western trade is very substantial and is as desirable as any that could be secured. I consider that the price is not disproportionate to the increase in the cost of producing, and the general advance in wages, and if the matter is sifted to the bottom no hardship is borne by anybody. When the wages paid in this country are on the raise the price of lumber goes hand in hand with all other commodities, and therefore no one can expect to drop in prices while the present wave of prosperity is with us."

BUFFALO.

Special Correspondence to The Marine Record.

Charles L. Ames, captain and owner of the sailing yacht Bohemian, was knocked overboard and drowned while sailing his yacht near Oswego on Sunday.

While superintending the sinking of cribs at the Canadian government works in the north channel, John F. Sheedy, a civil engineer, had his leg crushed by falling stone. He was taken to Ogdensburg on the tug John Hunter and his leg was amputated at the Marine Hospital.

Freight rate as follows: Chicago, 65 cents; Duluth, 40 cents; Milwaukee, 60 cents; Toledo, 40 cents; Racine, 65 cents; Hancock, 50 cents; Fort William, 50 cents; Marquette, 40 cents; Lake Linden, 50 cents; Waukegan, 65 cents; Houghton, 50 cents; Port Huron, 40 cents; Gladstone, 40 cents; Port Washington, 75 cents.

Word has been received here from New York that the rumored purchase of Mrs. James W. Martinez-Cardezas' steamyacht Eleanor by President J. J. Hill, of the Great Northern railroad, has been confirmed by the departure of the yacht from Tebo's basin, South Brooklyn, for the lakes. Certainly there is no one better able to use or support a yacht than is Mr. Hill.

The schooner Howland, which was sunk in the ice last spring and recently raised, was sold this week to the McMorran Wrecking Co., of Port Huron, which raised the boat. Repairs will probably be made here. The deck of the Howland is badly damaged, being broken by the wreckers, who removed the cargo, it is said. The amount of the purchase price was not given out.

Charles Knapper, first engineer of the Canadian steamer Glengarry, was drowned in the river this week. The Glengarry was lying alongside of the stone pier at the foot of Georgia street, and Knapper was returning aboard with Capt. Kane. In getting over the rail Knapper's foot slipped and he fell between the pier and the boat. Second Engineer McGuire succeeded in getting him out in a short time, but he was already dead. Knapper was 40 years old and came from Kingston, Ont.

FLOTSAM, JETSAM AND LAGAN.

The U. S. Army 18-inch gun which the Bethlehem Steel Co. of South Bethlehem, Pa., is manufacturing for the War Department, to be used in firing the Gathman torpedo, is nearing completion. It will weigh, without its carriage, 59.6 tons, and will be proved by firing ten rounds of solid shot, each weighing 2,000 lbs. and each requiring 450 lbs. of powder to secure the necessary velocity. This test will be extremely interesting and will take place some time in July at the Bethlehem Co.'s proving grounds, which are located at Redington, Pa.

They need a geography book at the office of the U. S. A. Commissioner of Navigation. In his annual report, he constantly refers to "Barrow, Ireland." What has England done, or Ireland, or both? And don't they teach geography in the U. S. A.? Anyhow, it does not speak much for the future of the American Merchant Navy if her Commissioner of Navigation does not know where Barrow is. But never mind. He might have said it was in the garden. —Syren and Shipping, London.

This is not so bad after all. A lot of us had Sunderland in Scotland a few weeks ago. The fact is, the blamed little country is so small that shires, cities, towns, villages, hamlets and settlements are all bunched atop of one another, something like a lady's chamber, where everything is uppermost and nothing at hand. A traveler from the United States was scary about getting aboard one of their trains in case it would drop off the line into the water before it got started in any one direction. A good fire engine could squirt water from Barrow to Belfast anyway.

A decision which will settle the dispute as to whether a vessel is liable for bills for supplies furnished on a contract signed by the corporation owning the boat will be handed down by Judge Colt, in the United States Circuit Court, in a short time. The case is an action in rem. brought by the Cuddy-Mullen Coal Co., of Cleveland, against the steamers of the Ogdensburg Transit Co. The coal company sought to enforce a lien to the amount of $20,000 against these boats for coal supplied them during 1898. The steamboat company contended that the coal was supplied in pursuance of a written contract with the company, and that the credit was consequently given to the company rather than to the boats. The company is in the hands of a receiver, and the claim is therefore barred. The matter has once been decided adversely to the steamboat company by Frederick Dodge, special master at Boston, and it has again come up on exceptions to the confirmation of his report. In the old days of individual ownership of vessels, claims of supplies were made directly to the ship, and followed the boat through transfer of ownership. The owning of boats by corporations has given rise to this latest phase of the business, and this decision will go far toward settling all claims of like nature in the future. It has come to pass that nine out of every ten boats on the lakes are owned by corporations, many being formed for the express purpose of building or buying one boat.

A BLOT ON HUMANITY—CAPT. KEITH IS RIGHT.

CHICAGO, June 26, 1900.

To the Editor of the Marine Record:

In your issue of the 21st, inst., there appeared an article quoted from the Cleveland Plain Dealer, which they had copied from the Chicago Inter-Ocean of the 19th, inst., a letter over my signature, wherein I was made to say that the drainage canal was the cause of lowering the lake level five inches. The truth is I never wrote the article or any part of it, but did say that the action of the current was the cause of lowering the river at Washington street five inches below lake level, which really was the case Sunday evening, the 17th inst.

No one was more surprised than myself when my attention was called to the article. A retraction or correction was demanded and promised, but the antiquated sheet had neither the courage nor courtesy to repair the mischief it had made, over a name used without authority. The news gatherer of the Inter-Ocean is an old offender, well-known to old-time masters, and more than once he has paid the penalty of involuntary baptism in the murky waters of Chicago river, and even at its worst there never was a time that it would not cleanse him. A sousing now would only mean pollution of the water that Chicago has paid $34,000,000 to purify. The opportunity, however, is denied, as an appearance of this blot on humanity has never been presented since the offense was committed.

J. G. KEITH.

LETTERS AT DETROIT MARINE POST OFFICE.

June 26, 1900.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

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Bachman Geo. M., Superior City.
Blayer H. D.—2, Macy.
Blanvelt G. E.
Bailey Wm. J.—2, Norwalk.
Brennan Capt. Thos.—2.
Brooks Henry, Sparta.
Cowan Henry.
Cassin Wm.
Cascadden Harry.
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Colbert Geo., R. Emily.
Crosby Harry—2, Bermuda.
Drysdale J. W.
Dibble Jas., Colonial.
Dunlop Wess.
Dent Geo.
Depey Harvey.
Denka Leea.
Edson Elbert J.
Erickson Emil, Str E. C. Hutchinson.
Gaslin Henry, Str. Swallow.
Glanswig John H.
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Greening Wm., Str Penobscot,
Grant, J. L.
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Hall Chas.
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Horner Harry,—2.
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Hill Arthur.
Inches H. C.
Long Otis, Sachem.
Mertin Bert,-2, Str. Traveler.
Middaugh L. Berf, Str. Egan.
Morrison Capt. Chas.
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Nulville Jas. J.--2, Str. Rugee.
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Miller John, Str. Argonaut.
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Roscoe Eugene, Str. Australia.
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Sharrow Alex., Str. Swallow.
Steyns Jud., Str. Langell.
Sperry Wm. L.
Tenant G., Str. Denver.
Wallis R. A., Str. Yakima.

B. F. DICKERSON, P. M.

LITERARY AND BOOK NOTICES.

We have received a copy of the boat-building centennial edition of the Elizabeth (Pa.) Herald. It contains many special features, among which may be mentioned the picture and brief description of the two Elizabeths on the first cover page, with specially engraved heading illustrating local steamboat interests; a very complete history of the industry of steamboat building at Elizabeth; a history of the Pittsburg & Elizabeth Packet Co.; a history of the Pittsburg & Brownsville Packet Co.; a history and description of the Elizabeth Marine Ways plant, the most complete of its kind on the Monongahela or Upper Ohio.

The publishers of the Railway and Engineering Review, Chicago, have the right idea about how to do things in an enterprising way at conventions and on other special occasions. Their portrait souvenir edition of June 16th, relating to the membership of the Master Car Builders' Association and the Railway Master Mechanics' Association, both of which organizations are holding their conventions in Saratoga this week, is one of the most attractive productions of the printer's and engraver's art that has come to our exchange table in a long time. The edition is printed on excellent paper, and contains the portraits of more than 400 members of the two associations in whose honor it was issued.

Admiralty Jurisdiction—Controversy Between Claimants to Fund in Court.—A court of admiralty, which has in its posession a fund arising from the sale of a vessel in proceedings for limitation of liability for collision, has jurisdiction to determine conflicting claims to such fund between the owners of the injured vessel and her insurers, who claim to be subrogated to their right to the fund by reason of having paid a policy of insurance on the vessel. The St. John's, 101 Fed. Rep. (U. S.) 469.

CONSTRUCTION OF A MERCATOR'S CHART.

POPULARITY AND PECULIARITY OF THE MERCATOR'S CHART—MERCATOR'S ORIGINAL SYSTEM. WRIGHT'S DEMONSTRATION—HOW TO CONSTRUCT AND USE A MERCATOR'S CHART.

ERNEST K. RODEN IN SCIENCE AND INDUSTRY.

(CONCLUDED FROM OUR ISSUE JUNE 21.)

Now, in order to restore a balance of orientation, or the rel ative position and direction of spaces, which are distributed horizontally (or in longitude), it is essential to distort the chart in an equal proportion vertically (or in latitude). When this has been done, the result is as shown in Fig. 4, which represents a complete map of half the northern hemisphere according to Mercator's system.

On account of this distortion of the Mercatorial chart in the higher latitudes, due to the necessity of satisfying, as far as possible, the conditions of conformity, equivalence, and equidistance, the intelligent reader will hardly fail to comprehend why the peninsula of Greenland looks larger than the United States, and why the area of the Kingdom of Spain appears insignificant in comparison with the islands of Spitzbergen.

Mercator did not demonstrate mathematically the principles of his system. Toward the close of the 16th century, however, Edward Wright, an English scientist, gave a mathematical demonstration of the law on which Mercator constructed his chart; at the same time he rendered a graphic explanation of the principles underlying its construction. He assumed that a cylinder contained a spherical globe representing the earth, Fig 5 (a), which was to swell like a bladder, equally in latitude and longitude, until it coincided with the concave surface of the cylinder; at the same time the meridians widen out until they are everywhere the same distance from each other, as on the equator. In this way the spherical surface is made to coincide with the cylindrical concave surface. Cutting the cylinder down a meridian, and opening it out into a flat surface, Fig. 5 (b) we shall find on it a representation of a Mercator's chart. For this reason, all the meridians are parallel straight lines, and the degrees of longitude are all equidistant; the latitude parallels are everywhere at right angles to the meridians; and hence the loxodromic line, or track of a ship that steers a straight continuous course, or the relative direction between two places, can be represented on a Mercator's chart as a straight line. Consequently, this chart satisfies the first condition, conformity—the other conditions being satisfied

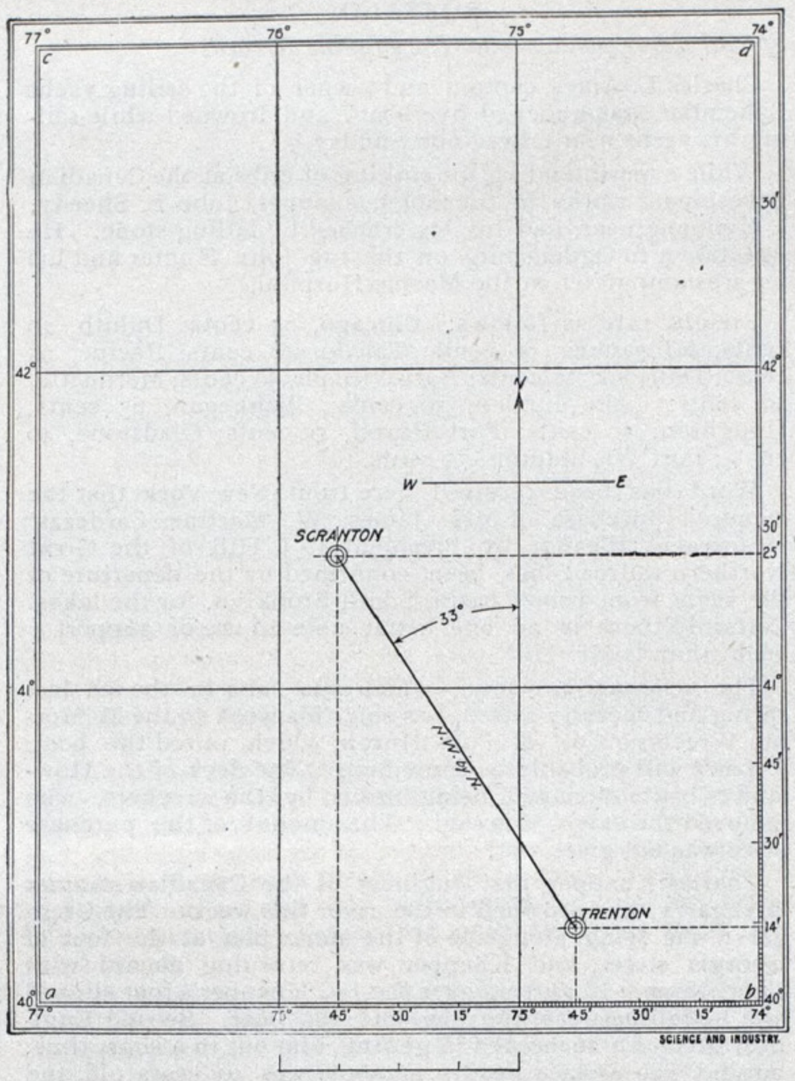

FIG 4.

to a great degree of accuracy. The degrees of latitude are all unequal, being increased in length from the equator to the pole, in the same proportion as the degrees of longitude decrease on the globe. The lengths of the small portions of the meridians thus increased, expressed in minutes of the equator, are called meridional parts; and the meridional part for any latitude is the line expressed in minutes of the equator into which the latitude is thus expanded. The length of the line on a Mercator's chart, or the difference, for any two latitudes, between the meridional parts, which represents the difference of latitude, is known as the meridional difference of latitude.

Many of our readers possibly think that the construction of a Mercator's chart is a very difficult and complicated problem, and something that cannot be mastered by the average man. We will, however, proceed to show that the problem, instead of being difficult, is very simple and easy. All that is needed is a table of meridional parts, which is to be found in any collection of mathematical or astronomical tables, and the usual outfit of drawing materials. The order of procedure is then as follows: First determine the limits of the proposed chart—in other words, the number of degrees and minutes it is to contain, both of latitude and of longitude. Then draw a straight line near the lower margin of the paper if the chart is to represent north latitude; near the upper margin if it is to represent south latitude; or at a suitable position toward the center if both north and south latitude are to be represented. Divide this line into as many equal parts as the number of degrees of longitude required; for instance, if the chart is to contain 15 degrees of longitude, divide the line into 15 equal parts. At each extremity erect lines perpendicular to it. Take out from the tables (referred to before) the meridional parts for each convenient degree of latitude, for the limits between which the chart is to be drawn, and take the difference between each successive pair, thus obtaining the meridional differences of latitude. Reduce these meridional differences to degrees, by dividing them by 60; the result will be the lengths on the longitude scale between the chosen degrees of latitude. Lay off these lengths successively on the perpendicular lines, and through the points thus obtained draw straight lines parallel to the original line, to represent latitude parallels. At convenient intervals, or through each division on the base line, draw lines parallel to the perpendiculars to represent meridians. The accuracy of the frame of the chart thus completed should be tested by measuring the two diagonals of the rectangle formed; if they are the same length, the frame is perfect. The principal points in the chart are now laid down according to their respective latitudes and longitudes; and whatever formations and contours of water or land required, together with other useful items, are drawn in freehand. A compass diagram may also be inserted, but it should be remembered that the direction of the meridians indicate true north and south.

In order to illustaate the foregoing, let it be required to construct a chart on the Mercator's projection, extending from latitude 40° N to 43° N, and from longitude 74° W to 77° W, on a scale of 2 inches to 1° of longitude.

In order to do this, draw a horizontal line a b, Fig. 6, at the bottom margin of the paper, to represent the fortieth parallel of latitude. On this line, lay off three lengths of 2 inches each, and divide each length into 60 equal parts, representing geographical miles. At the extremities of the line, carefully erect the perpendiculars a c and b d, to represent meridians. Then consult the table of meridional parts, and take out the values corresponding to each degree of latitude, and obtain the differences as indicated below:

LAT.	M. P.	M. D. L.
40°—2,607.9	}	78.6÷60 = 1° 18.6′
41°—2,686.5	}	79.8÷60 = 1° 19.8′
42°—2,766 3	}	81.1÷60 = 1° 21.1′
43°—2,847 4	}	

This complied with, take, with the dividers, 1° 18.6′ from the scale of longitude. and lay it off on each perpendicular from the base line, and through the points thus obtained

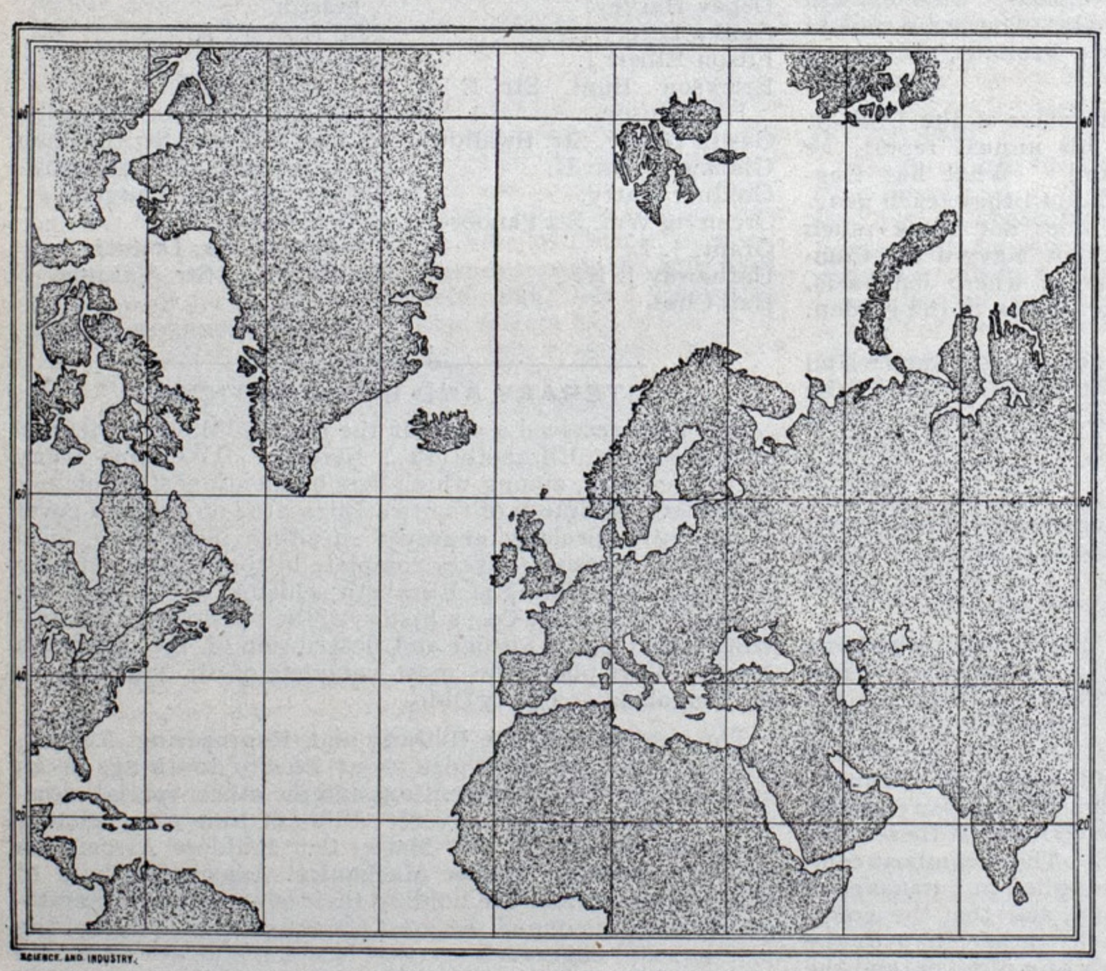

FIG. 6

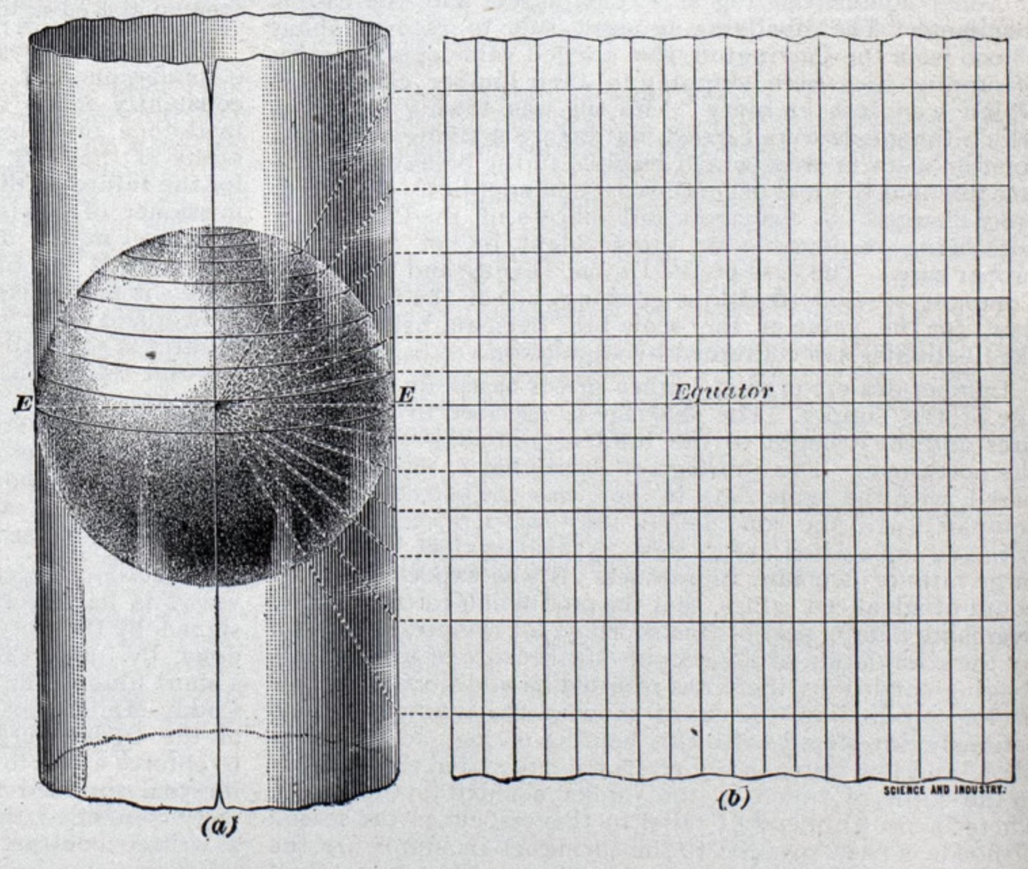

FIG. 5.

draw the parallel of 41°. In like manner, from the parallel of 41°, lay off 1° 19.8′, and draw the parallel of 42°. Proceed similarly and get the parallel of 43°. Divide this last parallel into degrees and minutes, the same as the parallel of 40°, and draw the meridians of 75° and 76° west longitude. The result will be as shown in Fig. 6, representing a chart on Mercator's projection according to the limits required.

Now, to demonstrate the usefulness of the Mercator's

chart, let us assume that we are 50 years ahead of the present time—that is, in 1950—when, in all probability, air ships will be as common as the bicycle of today. You are in Trenton, N. J. (Lat. 40° 14′ N. Long. 74° 46′ W), but urgent business requires your immediate presence at Scranton, Pa. (Lat. 41° 25′ N. Long. 75° 45′ W). Your air ship is in good condition, and you decide to take the shortest possible route in order to reach Scranton. Unfortunately, your map of Pennsylvania and New Jersey is lost, but a table of meridional parts, drawing materials, and a compass is at your disposal; you are also acquainted with the latitude and longitude of both places. All that has to be done now is to construct a chart similar to the one represented in Fig. 6, and mark down on it the positions of Trenton and Scranton, and connect the two places by a straight line. The angle that this line makes with one of the meridians will be the course you have to steer in order to reach Scranton in the shortest possible time. Measuring this angle, we find it to be 33° west of the meridian; hence, the course from Trenton to Scranton is N 33° W, or north-west by north. The correctness of this may be verified on any chart the reader may possess.

From what has been shown, it is evident that by the aid of a table of meridional parts, the construction of charts on Mercator's projection is quite simple, and can be mastered by any one that has a knowledge of drawing and simple arithmetic. From the nature of its construction, however, the inexactness of the Mercator's chart fully reveals itself in high latitudes, and for this reason is quite impracticable for polar navigation. In high latitudes, therefore, charts are not constructed on the Mercator's projection, but on the gnomonic projection, which is splendidly adapted for maps of the polar regions.

DEPTHS OF THE GREAT LAKES.

(From the Chicago Chronicle.)

If the chain of Great Lakes which bound the northern limits of a portion of the United States could be brought to the level of the sea two of the chains would be practically wiped off the face of the earth. Lake Michigan would become two lakes much smaller than the present majestic body of water which lies off Chicago. Chicagoans could travel on what is now the bottom of the lake as far north as a point midway between Milwaukee and Grand Haven without getting their feet wet.

No system of lakes presents as wide variations of extreme depth as the big fresh water system. Beginning with Superior and following the chain eastward, they vary from 1386 feet to but 210. They are respectively 602 feet above the sea level for Superior, 581 each for Michigan and Huron, 573 for Erie and but 247 for Ontario. Superior is far the deepest with Michigan second. Ontario is close on its heels, being within a few feet of Huron, while Erie is so shallow that its greatest depth is thirty-six feet less than the mid-lake depth of Michigan between Chicago and St. Joseph. Erie can claim but 210 feet extreme depth.

As good an object lesson of what the lakes have to offer is the course between Chicago and St. Joseph, Mich. The coast is measured from the lights of the two harbors. Beginning from this side of the Government pier, already quite a way out, there is a depth of some thirty-six feet. The lake shoals on this side so that the extreme depth of the spoon is a trifle beyond the middle of the fifty-seven mile course. It drops rapidly, however, from sixteen in the river to 246 out in the lake. But on the other side, within a couple of miles of the shore, the depth drops from twenty-four feet to 166 with frightful rapidity. By the time the second song is sung leaving St. Joseph the singer is in over some forty fathoms of water.

Superior, if reduced to the sea level, would be robbed of two-thirds of its dimensions. The extreme depth is well east of the middle line. Michigan has her greatest depth, 1,100 feet up, toward the Straits. Huron is less than 800, while Erie is very shallow. Ontario has a depth of 735 feet, owing to the falls of Niagara. If all were brought to sea level, Erie would be 500 feet above, Michigan would be a couple of ponds, Huron almost out of it, Superior a lake not much larger than many another, and Ontario the largest of the system.

Payment by Loss of Collision—Subrogation to Damage Claim.—The right of subrogation in favor of marine insurers on payment of a loss resulting from collision, whether partial or total, is independent of any abandonment, and exists without it. The St. Johns, 101 Fed. Rep. (U. S.) 469.

THE EXPORT OF AMERICAN COAL.

(The Yale Scientific Monthly.)

During the past eighteen months Europe has suffered a coal stringency, which has greatly impeded industry on the continent and in England itself has raised the cost of manufacture and transportation. This insufficiency of the coal supply has been due to three principal causes: The industrial activity which stimulated the American consumption of coal to so marked a degree, has been equally prevalent in Europe. In fact the cycle of prosperity came upon Europe a year before it was felt in this country. Another reason for Europe's scarcity of coal is the South African war. This war has not only increased the consumption of coal but has decreased the number of miners by drawing them into the army. Again, the coal production of the continent has suffered from protracted strikes in the French and Hungarian mines. These events have sorely tried the European coal supply and the inability of that supply to fill the demand, has suggested the use of American coal in Europe.

Great Britain and Germany are the only European countries which produce more coal than is required by their home consumption. During 1899 the coal production of all Europe was 404 million tons. Half of this amount came from the English collieries, and 36 million tons of the English output was consumed on the continent. France imports from England one-fifth as much coal as she herself produces; with Germany this proportion is one-twentieth; with Russia one-fourth. Spain's coal production and her imports from England are about equal. Holland, Denmark, Norway, Italy and Turkey are practically without coal mines and draw their principal supply from England. Upon the continent English coal holds the balance of power between a coal sufficiency and a coal famine. Therefore, England's ability to sustain and increase her coal output is the key to the coal situation in Europe.

The maximum output and the possible exhaustion of the English coal fields is a question which admits of very contradictory answers. Forty years ago Jevons pointed out the small significance of estimates based on the amount of coal actually held beneath the ground. Long before the last ton of coal could be reached the cost of mining would have attracted the product of more available fields. An economic not a physical check would close the English collieries. Jevons' predictions as to an increased price have been, in a measure, sustained. In 1860 the price of the best English coal was about $2.50 per ton. In 1900 the quoted price has reached $5.50. Within the past two years "the average price of coal and coke has probably advanced quite 100 per cent."* Since 1897 the contract price of locomotive coal has advanced 50 per cent. The increased output during the past year is 8.8 per cent.

The fact that the high prices of coal have not called forth a larger production is significant in showing England's future position as a coal producer. It is admitted that the Scotch collieries have already attained their maximum. In Wales and the southern countries an increased demand is met by sinking deeper shafts and thus adding to the cost of hoisting, pumping and ventilating. New fields are developed only as their disadvantages are counterbalanced by the increased cost of production in the old mines. In other words, English coal mining is obeying the law of diminishing returns with all the strictness which attend an extractive industry in an old and developed country.

This is the fundamental condition which would subject England to a disadvantage if her coal and that of a comparatively undeveloped coutry, such as America, could compete on equal terms. It must not be supposed, however, that England's present coal production is failing. Up to 1899 England produced more coal than did any other nation, and now that the United States has assumed England's position as the largest coal producer in the world, she does so only by means of a coal field twenty times as large as that of England.

The coal deposits within the United States are sufficient to supply Europe's need is well understood. While the maximum output of coal in England is rapidly reaching its limit, the coal production in this country is but one-third of the production possible.† During 1899 the coal output increased 16 per cent. But the physical possibility of filling the European deficiency is of comparatively small importance in determining whether or not American coal will immediately enter the European markets. This is a question of competitive prices. The price paid for American coal must cover three items: The cost of mining, of transporting to the sea board and the ocean freight. The third item quite overbalances the first two. The quoted price of the best grade coal in the Chesapeake ports is $2.15; that of the best coal in Cardiff, Wales is $5.25. The cost of transportation to Genoa, Italy is $4 25 per ton for the American and $2.25 for the English coal. These figures are crude and merely show the apparent margin of profit.

Coal is so bulky a commodity that ocean freight must be the determining factor in this export trade. However, it may be assumed that as the trans-Atlantic transportation of coal becomes a more developed business, economies will be introduced to the marked lowering of ocean charges. Boats especially designed to carry not less than 5,000, and possibly 7,000 tons would imply an ocean rate of $1.25 per ton to British and $1.50 per ton to Mediterranean ports. Assuming $300,000 as the initial cost of a coal steamer carrying 7,000 tons, the cost of a trip one way can be shown to be about $8,000, and, under favorable conditions, this amount would be subject to considerable reductions.‡ This estimate implies a return cargo. In the matter of back freight the position of the United States would be less favorable than that of England. England's coal made her a manufacturing nation and so a refiner of raw materials. Her exports became less bulky than her imports, and the shipmasters rather sail in ballast loaded than returning vessels with coal. America's exports to Europe consists of bulky commodities, especially agricultural products. The imports, on the other hand, are mostly fine manufactured goods But in the South American trade this condition is reversed, and, as the southern continent is unsupplied with coal, it is natural to suppose that our coal will find a market in South America quite as readily as in Europe. It is noticeable that, with the industrial development of the United States, the importation of raw materials increases. The 1899 imports of bulky materials, such as hides and rubber, were 68 per cent. in advance of similar importations in 1893.‖

The increased price and production of American coal has already been cited. During 1899 the demand for coal in the country was far from satisfied, many manufacturers being nable to obtain sufficient fuel. This scarcity caused the investment of much capital in American coal properties. When once the attention of the investing public has been attracted by the profitable prices current in any industry and the movement for increasing the supply gets under way, its own momentum may carry it beyond the point warranted by the needs of the country. If general business prosperity makes this condition true of many industries the over production results in the so-called "hard times." How far this movement is now being carried on in the coal business is a matter of speculation. In West Virginia the present year opened with five new railroads under construction and "quite a number about to be begun." In Pennsylvania 177 miles of new railroad are now being built. These branch roads bring the undeveloped coal fields into touch with the trunk lines. Thousands of new coke ovens are reported in process of construction. The coal trade is adapting itself to the demands of "good times" business. When the round of prosperity has ended, a great mass of coal will be thrown out of market. Coal is too bulky to be put in store. It must be sold even at unremunerative prices. Since European industry is not subject to the violent fluctuations prevailing in the United States and since the periods of business depressions in the two continents are not necessarily contemporaneous, it follows that American coal will enter the European market more readily during a period of American business depression.

Up to this time the export of American coal has been comparatively unimportant. In 1899 5 75 million tons were exported, being an increase of 27 per cent. over the previous year. The exports for the first three months of 1900 have been two million tons. When American producers are barely able to supply the home demand the temptation to engage in foreign business is extremely slight. But as the production outstrips the home demand the miners will be compelled to find new markets, and thus an export trade in American coal will be established.

* "Iron and Coal Trades Review," 1900.
† "Coal Trade Journal," April, 1900.
‡ "Coal Trade Journal," April, 1900.
‖ New York Times, January 1, 1900.

Weight of Evidence.—Testimony from a steamer, clearly in fault for a collision with a sailing vessel, that the latter was guilty of contributing fault by changing her course, will be viewed with suspicion; and when the evidence from the sailing vessel is to the contrary, and accords with the probabilities, it will be accepted in preference. The Isaac H. Tillyer, 101 Fed. Rep. (U. S.) 478.

MARINE RECORD

ESTABLISHED 1878.

Published Every Thursday by
THE MARINE RECORD PUBLISHING CO.,
Incorporated.

C. E. RUSKIN, - - - - - Manager.
CAPT. JOHN SWAINSON, - - - Editor

CLEVELAND, Western Reserve Building. CHICAGO, Royal Insurance Building.

SUBSCRIPTION.

One Copy, one year, postage paid, - - $2.00
One Copy, one year, to foreign countries, - - $3.00
Invariably in advance.

ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office,
THE MARINE RECORD PUBLISHING CO.,
Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

No attention is paid to anonymous communications, but the wishes of contributors as to the use of their names will be scrupulously regarded.

CLEVELAND, O., JUNE 28, 1900.

CHICAGO RIVER CURRENT.

The RECORD has used every means during the past decade in bringing this most important subject before those most nearly interested, and, as a further contribution to our already extensive work along these lines, we are permitted through the courtesy of the Hon. F. Gourdeau, Deputy Minister of Marine and Fisheries, Ottawa, to publish an excerpt from an "ad interim report on the effect of the Chicago drainage canal on the level of the lakes," as viewed from a standpoint based on hydraulics:

"The science of hydraulics is pre-eminently inductive or experimental. It is very unsafe to predict a formula on any of the observed phenomena of flowing water until verified by experiment. This arises from no analytic defect in the demonstration, but because the conditions of any two cases are seldom or never exactly alike. We can compute theoretically, within reasonable limits of accuracy, the discharge over a weir, or through a regular channel, as a canal, with given slope and dimensions. But when it comes to gauging a large river like the St. Lawrence, or any of the connecting links in the great system of our inland seas, hydraulic formulæ lose their magic and theory and speculation have to step aside and make way for experiment. Even with modern improvements in methods and instruments, discharge measurements are not only a delicate operation, but are stil hemmed round with much uncertainty.

"Much as are discharge computations surrounded, if not involved in mystery, they are simplicity itself compared to any approximate, much less exact determination in advance of the effect of the Chicago drainage channel on the levels of the Great Lakes. It is obvious to the plainest understanding that the surface of the lakes must, to some extent, be lowered by the opening of the new outlet, or more properly perhaps, ancient outlet, resucitated at Chicago. The project in theory contemplates an ultimate draught on the reservoir of 10,000 cubic feet per second at the lowest stage of Lake Michigan. With the known fluctuations of the lake, this will often exceed 15,000 cubic feet per second. To believe that this will not prejudicially affect the levels of all the lakes, except Lake Superior, as well as all their connecting waterways and outlet, would be equivalent to believing an absurdity. The commonest understanding has no difficulty in believing and appreciating this, the greatest intellect cannot soar much higher, come much nearer to a solution.

"The problem is complex and intricate as unique. No hydraulic formula is applicable to it, for the simple reason that no such contingency has hitherto arisen, or is likely to ever again arise. It is so beset with extraneous, disturbing elements, impossible of elimination, as to be practically indeterminate by any known hydraulic formula. Among these are storms, changes of barometric pressure, changes in rainfall, and in the percentage of the precipitation absorbed' etc. It is recorded that in the storm of Lake Erie of October 14, 1893, there was a difference of elevation of nearly twelve feet between the western and eastern ends of the lake. That is to say, at Toledo the water fell 6 feet 8 inches below the then normal level of the lake, while at Buffalo the water rose 5 feet 3 inches, or a total difference of elevation of 11 feet 11 inches between these two places.

"An idea of the complexity of the problem may be gleaned from the following assumption: Suppose that nature, in her inscrutable ways, instead of inspiring her pigmy offspring with the conception of the construction of an artificial channel from Lake Michigan to the Mississippi River, capable of discharging at the lowest stage of lake level, not less than 10,000 cubic feet of water per second, augumenting with the increased head of pressure to a probable discharge at mean lake level to 15,000 cubic feet, and a maximum discharge at highest lake level of 17,000 cubic feet, had, in her own laboratory, fashioned and chiseled out a subterranean passage of equal capacity with the proposed Chicago drainage ditch, fitting the outlet with automatic valves and sluices to regulate the outflow in such a manner that like discharges would take place under similar heads of pressure. With present knowledge of the physics and hydraulics of the Great Lakes, it would, perchance, take a century of minute, elaborate, scientific research to determine whether one gallon of Lake Michigan's water had escaped by other than the normal or natural process—discharge through the Straits of Mackinac into Lake Huron, and absorption into the atmosphere through evaporation. It is not improbable at the close of the century's investigations, science would retire baffled, discomfitted in the contest with nature, the mystery still unsolved, that the loss would be still masked, eclipsed, concealed from human ken, unless disclosed by accident, while the fact remained that Lake Michigan was bled during every second of that century to the tune of 12-000 cubic feet, with the doctors still diagnosing the patient. The discharge would aggregate to the enormous quantity of nearly forty trillions (39,446,161,250,000) cubic feet, a quantity too vast to be comprensible to the most trained intellect. Some tangible idea of its vastness may be presented to the mind by clothing it in the concrete form of a mass of water occupying a hollow prism or parallelepipedon, 283 miles long, 50 miles wide and 100 feet deep.

"The board of engineers, in their report on this phase of of the inquiry says: 'The abstraction of 10,000 cubic feet of water per second from Lake Michigan will lower the levels of all the lakes of the system, except Lake Superior, and reduce the navigable capacity of all harbors and shallows throughout the system to an extent that may be determined, if at all, by actual measurement only.'

"Again they say: 'The water levels of the Great Lakes are very delicate.'

"Mark the phraseology used by the board. The effect on the levels of the Great Lakes of the abstraction of 10,000 cubic feet per second from Lake Michigan, may be determined, if such determination be at all possible, 'by actual measurement only.' Manifestly, the board entertain grave doubts of its possibility under any circumstances. But, if at all possible, it is only by pursuing the modus they recommend."

Major Willard says it is safe to estimate the mean velocities of the sections at about 80 per cent. of the maximums, which would give an average of less than one mile per hour for a discharge not exceeding 310,000 cubic feet per minute, and less than one and a half miles per hour for a discharge not exceeding 310,000 cubic feet per minute, and therefore the general current of the Chicago river must be much less.

The greatest velocity corresponding to the greatest discharge of the canal was observed at the Canal street bridge, say two and a quarter miles per hour, with a mean of one and three-quarter miles per hour.

Gen. Wilson, chief of engineers, endorses the report in the following language:

"Under date of May 16, 1900, the Secretary of War directed that a petition of the Lake Carriers' Association be referred to the engineer officer in charge at Chicago. The petition requested the issuing of regulations requiring the trustees of the sanitary district of Chicago to so control the flow of water through the drainage canal as to prevent its being destructive to navigation interests and injury to property.

"While, under the laws of the conditional permit granted the sanitary district of Chicago, the Secretary of War has reserved the right to require the outlet to be closed or flow regulated, and while the interests of navigation are entitled to receive full consideration, it will appear that action on his part can properly be deferred a little longer until the effects of the further experiments are more fully demonstrated, especially as by one of the conditions of the permit the sanitary district is responsible for any damage to navigation or property interests resulting from their control of the discharge of the river. Major Willard will be instructed to continue his observations and keep this office promptly and properly informed."

EXACTLY as we expected, from the force that has been brought to bear, Major Willard now states relative to the current in Chicago river:

"I have little doubt, that they could handle their boats safely even in greater currents than now exist. If I have not overestimated the pilots' skill, and considering the immense benefit of the drainage canal to the citizens of Chicago since its opening a few months ago, I recommend that no restrictions be placed upon the legal requirements of flow into the sanitary canal, unless it should be found absolutely necessary to do so."

Certainly not, Major. What is the use of your West Point training if you can't train with the puppets that desire to pull you. Furthermore, why do you try to discount your pedecessor in his engineering ability.

THE men, ashore, in control of the U. S. Mercantile Marine are, to a large extent, incompetent. The Secretary of the Treasurasy, well as the very able Commissioner of Navigation, ought possibly to look into the Steamboat Inspection Service. The foregoing, may be considered, as saying either too much or too little, notwithstanding, we mean exactly as stated. Let's examine the Steamboat Inspection Service???

THE district officer of the U. S. government at Chicago is asked to say whether their, at present, $30,000,000 investment will, or will not hurt other interests???

THE Chicago drainage canal is injurious to the general welfare of lake navigation, to what extent???

IRON AND STEEL PLANT.

Circulation has lately been given to indefinite reports of a big iron and steel plant projected in the vicinity of Welland on the Welland canal, in Ontario, and the supposition was that capital for the enterprise had been furnished or pledged by Toronto, New York and Pittsburg interests. The first authentic information concerning the undertaking was had from P. E. Hinckley, of New York, who is vice president of the company, which has already been incorporated under the name of the Canadian Steel Co. Its capital stock is $18,000-000, and in addition there will be an issue of about $7,000,-000 in bonds, bringing the total amount of the company's securities up to $25,000,000.

Mr. Hinckley refused to identify the financial interests behind the project, but said the first call of 25 per cent on subscriptions to the stock had been made. When the call has been honored 10 per cent of the subscriptions will be deposited with a chartered bank in Canada as evidence of good faith on the part of the company. Of the total capital stock there will be only $4,000,000 in preferred, paying 7 per cent. Mr. Hinckley explained the advantages to be derived by an iron and steel plant on the site selected.

"Ore can be transported," said he, "direct from the mines to our plant by water, and there is also good water navigation from the plant to the Atlantic by way of Lake Ontario and the St. Lawrence. The belief that we proposed to utilize electric power from Niagara Falls is wrong. There is a sufficient supply of water power at Welland, and this we will use, at about one-half the cost of steam. In addition to this, our plant will be located in the center of a natural gas field. We expect to have our first plant completed within a year, and the larger part of our capital stock will be expended in construction work. About 200 acres of land on the Niagara peninsula has been acquired by the company."

The main office of the company will be located in Toronto.

AN attractive catalogue, describing and illustrating gasoline engines for marine service, has been issued by the Rochester Gas Engine Company of Rochester, N. Y. The company has developed a complete system of propulsion for pleasure craft, and is building single and double cylinder engines on the two cycle principle. Testimonals are presented from many prominent users of launches in which Rochester engines have been placed.

THE TUG-MENS' ASSOCIATION.

The following letter comes to us from Duluth:

"There is a tug owner in this port today who cannot find an engineer to run his boat. The engineer who was on the tug was ordered off by the association for the reason that the master of the tug was not a member of the association, and had refused to join it. The association refuses to permit an engineer to go on the boat until such time as the owner hires an association man to act as master. Now these facts, put together by a good attorney, might constitute a good cause of action in a court of law, and the court having original jurisdiction in said cause might be a United States court, and if Uncle Sam should ever have such facts put before him for consideration through one of his courts, the engineer in question might be called back to his tug.

"The idea seems to be entertained by some of the men that Uncle Sam stands at their backs to sustain them in anything they may see fit to do. Under existing laws no man can procure a license to run either end of a tug until he has worked on one for 36 months, and has his application signed by two or three licensed men under whom he has served during the above period of time. It is thus a very easy matter for the association to keep the number of licensed men down to somewhere near the number in existence. No matter how well qualified a man may be to handle either end of a tug it is useless for him to present himself before the examiners as an applicant for papers unless he has obtained the consent of the association to make such application. The law at present permits the association to stand between the applicant and the examiners. To all intents and purposes, the United States government is in league with the association to prevent the issuing of new papers. It frequently happens that well trained and skillful men are debarred from appearing before the examiners because of their inability to procure necessary signers.

"This is a very good thing for the association, but some time or other Uucle Sam may take a notion to change these laws so as to make it possible for a man to get his papers without the consent, and even without the knowledge, of the association, or any of its members. It would seem to behoove the association to let their moderation be known to all men."

WAR TIME EXPERIENCE.

During the war the Navy Department paid $160,000 for a steamer, christened her Cassius and used her as a collier.

After the war this cargo boat was taken by the War Department, transformed into a transport and named Sumner. The transformation cost the people $652,000.

It was great, though. When the money had been spent the coal carrier was a floating palace—for the officers.

Congressman Driggs, Democrat, of Brooklyn, gives in the Congressional Record this description of Uncle Sam's investment:

"I have boarded many of the finest trans-Atlantic liners; I have seen many of the finest private yachts of our richest millionaires; but upon none of these craft are the bathrooms so expensive, so luxurious, so complete so beautiful as those on this army transport. The bathrooms of the captain and commisary, fitted up as they are with so-called marble bath tubs, hot and cold water, shower and needle baths, tiled floorings and wainscoting, German silver piping and porcelain wash stands, compels a fair-minded man to stand and stare aghast at the reckless expenditure of money, for each of these bathrooms cost many hundreds dollars to equip.

"This is not all, for there are 12 other bathrooms on board the ship almost as beautiful, almost as extravagantly fitted up, and almost as costly. The average cost of each bathroom was $354.96. They are for the use of officers and passengers, while the enlisted men—the men who are to fight for their country—are forced to be satisfied with unsanitary, rough, brass sluice troughs.

"The dining saloon is another magnificent evidence of how money lavishly expended can beautify the most ordinary rooms. Imagine to yourselves a great, richly carved mahogany sideboard, 6 by 12 feet, said to have cost for labor and material over $1,000, on one side of the saloon; three long and heavy tables, with solid mahogany tops and legs, in center of saloon, each table surrounded by the finest sort of mahogany dining chairs; comfortable mahogany settees on other side of saloon, and a very pretty and complete mahogany-finished smoking room just off the dining saloon."

The Sumner is one of the smallest of the transport fleet, and without exception, she is the most expensive craft that I have ever seen.

LAUNCH OF THE CHIPPEWA.

A very successful launch was that of the passenger steamer Chippewa, at the yard of the Craig Ship Building Co., Toledo, O., on Saturday afternoon last.

The Chippewa is 210 feet over all, 34 feet beam, with a draft of 13 feet, moulded depth from upper decks, 21 feet Her furnishings are costly and elegant. Her cabins are finished in mahogany. She will run between the "Soo" and Mackinaw Island.

Her engines are 20, 32 and 55, by 30-inch stroke. They are built by the Craig Ship Building Co. She has four Roberts water tube boilers 8½x9 feet.

The captain of the Chippewa will be James B. Mauder, and her engineer, Patrick Eustis. Engineer Cady Markley will have charge of the engineer's department on the trial trip of the Chippewa, which is expected to take place next Saturday on Lake Erie. It is expected that she will make 18 miles an hour with ease. Engineer Markley took the ocean going steamer Tampico through to the Atlantic for the Craigs.

VESSEL BROKERS ARE HONEST.

The following, from Milwaukee, seems to indicate that someone has been libeling the vessel agents of Chicago, in order to secure a cut on the chartering rates:

Can you tell me whether the vessel agents in Chicago have abolished their charges for chartering grain vessels, and are now satisfied with the commission allowed them on the placing of the insurance on the cargo? I ask for this information in the utmost good faith. Ten days ago a Buffalo owner wanted such terms for the chartering of his vessel here, saying that he no longer paid anything in Chicago for the chartering. To-day we have another such proposition, coming this time from Cleveland. This last letter cities a fact we are all conversant with so far as the figures go. It says: "My two vessels carry 100,000 bushels each. The premium on the insurance on this grain is $500, and the commission to the vessel agent for placing the insurance is $75. It seems to me that there should be no charge for chartering the vessels where the agents get such a handsome commission on the insurance of the cargo."

I have refused to knock off the usual charge for chartering, and I hope the Chicago agents are not knocking it off.

ANXIOUS INQUIRER.

Thorough investigation of this matter was made, but it could not be learned that any of the agents were throwing off their chartertng rates. They claimed that rates had been maintained firmly. One of the agents said:

"Some of the vessel owners along the lakes do not fully appreciate the services rendered by vessel agents in Chicago. They do not take into account what it costs to be a member of the board of trade, what it costs for office rent around the board of trade or what it costs for clerk hire and incidentals. The agent's time is supposed to be thrown in gratis. No, sir, the chartering charge is not thrown off, and will not be. It may be necesssary to call a meeting of the agents in regard to this, or to form a strong association of the agents here and at Milwaukee. At all events, we shall fight any such proposition."

THE Marine Journal of New York is making a frantic effort to become the official mouthpiece of Supervising Inspector-General Dumont at the expense of river interests, notwithstanding it has some patronage from rivermen. We would advise Capt. Norton to come out West occasionally and make a trip on our Western streams, so that he may become acquainted with our desires and needs before mixing in river matters; and when we desire to comment on sea-going rules and regulations that are enforced by the Inspection Service, we will visit the Atlantic and Gulf coasts often enough to become thoroughly familar with their needs, instead of rushing in blindfolded simply to vindicate the rulings of a fossilized nonentity. * * * Can it be possible that the Supervising Inspector General has been asleep since 1882, when this accident occurred, and has only just woke up to issue his pilot-house order? The above argument reminds us that 25 years ago people were killed on railroads, and are being killed nearly every day. Yet it is strange that people travel on railroadsto-day!—The Waterways Journal, St. Louis, Mo.

CONSUL Gibbs sends the following from Tamatave: "I am in receipt of an inquiry from M. Joseph de Floris, Manhanoro, Madagascar, for the names of American builders of steam launches, and from Messrs. Chan, Ming & Co., Tamatave, Madagascar, for the name of a commission agent with whom they may be able to do business direct with America."

WHERE THE SLAVE-TRADE BEGAN.

The chief source of supply for the devouring slave-market of the West throughout the whole history of the trade, and practically the only source during the years when the trade was legal, was found along the Atlantic coast of Africa, between Cape Verde, at the north, and Benguela, or Cape St. Martha, at the south. The sea here scoops into the land in such a fashion that school children who compare this coastline with that of Brazil, often speak of the protruding point of the south American continet having been broken out of the hollow in the African coast. It is a most remarkable coast in its physical aspects, for, although two great rivers and a host of smaller streams come down to the sea within its limits, and its contour, as a whole is that of a mighty gulf, there is neither bay nor inlet throughout its whole extent that forms a good harbor for shipping. And the offshore islands, too, are few in number and small in extent. The story of the first American voyage to Africa, of which we have a definite record, tells us somewhat of the methods employed in obtaining slave-cargoes. A Boston ship, commanded by one Captain Smith, went away to Madeira with salt-fish and staves. Sailing thence, with the proceeds of her sale, she "touched on the coast of Guinea" for slaves. She found some London slave-vessels already there, with their captains very much disgruntled because trade was dull. There were very few slaves for sale, that is, and to liven matters a little, the Yankees and Londoners united, and "on pretence of some quarrel with the natives landed a 'murderer'—the expressive name of a small cannon—attacked a negro village on Sunday, killed many of the inhabitants, and made a few prisoners, two of whom fell to the share of the Boston ship."

That was in 1645—just twenty-six years after the "Dutchman" landed the slaves in Virginia, as recorded by John Rolfe, the first American squaw man. False pretence, outrage, and the slaughter of innocents characterized the first-recorded gathering of slaves in which an American ship had part. They "killed many of the inhabitants," and got two slaves for their share of the plunder.

That Captain Smith's act was not according to the ordinary usages of the trade may be inferred from what happened when he returned to Boston. A quarrel with the ship's owners over the proceeds of the voyage resulted in a lawsuit. The story of the voyage was told in court, and although it was not a criminal trial, one of the magistrates "charged the master with a threefold offence, murder, manstealing, and Sabbath breaking." The captain escaped punishment on these charges, on the ground that the court had no jurisdiction over crimes committed in Africa (a decision that was typical of what was to come), but the two slaves were returned home.—From "The Slave-trade in America," by John R. Spears, in the July Scribner's.

ENDORSES THE TOWING MACHINE.

Engineer Albert Rickards, U. S. light househ tender Manzanita, having witnessed the workings of the Shaw & Spiegle towing machine, wrote the President of the American Ship Windlass Co. the following letter. To vessel owners on this coast it will be of special interest, as some have doubted its capability on the rough bars on the Pacific, while admitting the machine might work on the lakes or on the Atlantic. The letter, entirely unsolicited, is another proof the machine is all that is claimed for it.

ASTORIA, ORE., June 3, 1900.

FRANK S. MANTON, ESQ.

Dear Sir—I take pleasure in testifying to the great efficiency of the automatic steam towing machine manufactured by you, on the tug Sampson owned by Hale & Kern, of Portland, Oregon, contractors under the Government for building the Gray's Harber Jetty. The trock and material is procured on the Columbia river, is towed to Astoria from the quarry 115 miles by river boat. The barges are built like a ship's hull 1500 tons and loaded to 17 feet. The tug Sampson takes the barge at Astoria to Gray's Harbor crossing the Columbia river bar and Gray's Harbor bar, each barge crossing the two bars going and coming twice. From the Columbia bar to Gray's Harbor bar is about 35 miles of coast towing.

On the 19th of May while lying off the Columbia bar waiting for flood tide, the Sampson and her barge came out. The bar was rough and we could see the Sampson leap out of water her whole hull in the air while the barge was like a half tide rock, the breakers going all over her with a force that is only known to those who battle with rough bars on this coast. Without this automatic towing machine such work could never be accomplished: something must give when a heavy tug falls in such a sea and the barge buts into one at the same time. I think this work demonstrates the worth of such a machine. Yours truly,

(Signed) A. RICKARDS.

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New Steamboat Hull.

Built for passenger and freight service. Suitable for lake and river work; good sea boat. Dimensions, 97 feet over all; 18 ft. beam. Stem, stern, frames, keel and keelson of white oak; planking of oak and long leafed yellow pine. All fastenings of galvanized iron. Vessel thoroughly salted. Hull of fine lines, and would be very fast with good machinery. Has high pressure engine, 14x14 in., but no boiler. Will sell as she stands cheap for cash, or will fit out complete in first-class way. Photograph, if desired. Address,

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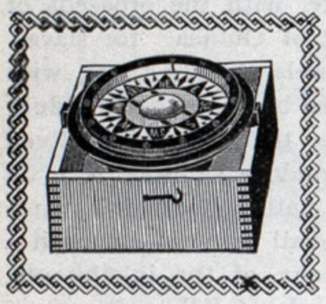

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NOTICE TO MARINERS..

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., June 21, 1900.

SOUTH HAVEN PIERHEAD LIGHT STATION. Notice is hereby given that, on or about July 14, 1900, the fifth order fixed red light, with the tower from which it is now shown, at this station, on the south pier at the entrance to South Haven Harbor, easterly side of Lake Michigan, will be moved about 250 feet and established on the outer end of the extension of the south pier. About 250 feet of elevated walk will be built shoreward from the tower in its new position.

By order of the Light-House Board.

FRANCIS J. HIGGINSON,
Rear Admiral, U. S. N., Chairman.

DOMINION OF CANADA.—ONTARIO.

I. MIDLAND RANGE LIGHTS. The two pairs of range lights to guide into Midland harbour, Georgian Bay, Ontario, will be put in operation for the first time on the night of the 15th instant, as follows:

Brebeuf range front light.—This will be temporarily, until the removal of the lighthouse from Gin rock is completed, a fixed white light shown from a pressed lens lantern hoisted 23 feet above water level on a day beacon consisting of a pole brace with horizontal slat work on the pole and braces, the whole whitewashed, standing upon the north end of Brebeuf island.

The light should be visible 5 miles from all points of approach by water.

It is expected that by the 25th instant this will be replaced by a permanent light from the light building removed from Gin rock. When the building is ready the substitution will be made without further notice, and the temporary structure will be removed.

The lighthouse tower is a square wooden building with sloping sides, painted white, surmounted by a polygonal iron lantern painted red. It is 36 feet high from its base to the ventilator on the lantern. It will replace the day beacon on the north end of Brebeuf island, the site being a bare rock 8 feet above the water.

The light will be a fixed white catoptric light, elevated 40 feet above water level. It should be visible 11 miles from all points of approach by water.

Brebeuf range back light.—This light will be shown from a tower erected on the west shore of Beausoleil island, 2,400 feet S. 86° E. (N. 88° E. true) from the front one.

The tower is a square wooden building with sloping sides, painted white, with a red roof. The light is shown from a window at the top of the tower. The building is 42 feet high from its sills to the top of the ventilator on the lantern.

The light is a fixed white catoptric light, elevated 40 feet above water level. It should be visible 11 miles in the line of range.

The above described two lights in one, bearing S. 86° E., lead in from outside Bennet bank to the alignment of the Midland point range, leading 750 feet south of the black buoy off Giant's Tomb lighthouse, and 500 feet north of the red buoy off Sawlog point.

Midland point range front light.—This will be a fixed white light elevated 31 feet above water level, and visible 10 miles from all points of approach by water. The illuminating apparatus is dioptric of the seventh order.

It will be shown from a tower erected upon the site of, and replacing, the front range beacon established last year on the beach 6 cables S. 54° E. from Sucker creek point, and northerly from Midland point.

The tower stands on a cribwork pier 4 feet high, and is a square wooden building with sloping sides, painted white, surmounted by a square wooden lantern painted red. It is 33 feet high from its base to the ventilator on the lantern.

Midland point range back light.—This will be a similar light to the front one, shown from a similar tower, erected upon the site of, and replacing, the back range beacon, established last year on the beach, 3,000 feet S. 17° E. (S. 23° E. true) from the front one. The tower is 43 feet high and the light is elevated 41 feet above water level, and should be visible 11 miles from all points of approach by water.

These two lights in one lead in, S. 17° E., from the intersection with the alignment of the Brebeuf range lights to within half a mile of the front tower, where the lights should be opened on the starboard hand. The shore here is bold and may be kept close aboard until Midland point is rounded.

II. DREDGING AT PORT COLBORNE. W. G. Thompson, Esq., superintending engineer of the Welland canal, announces that the work of improving Port Colborne harbour has been begun, and that a dredge is now at work at the entrance, for which mariners should keep a lookout.

Enquiry was make into the striking of the steamer Glengarry in Port Colborne on the 9th October 1899, reported in U. S. Hydrographic office notice to mariners, No. 43 (1034), of 1899, and it was found that the grounding was occasioned by a heavy wind up the lake, which temporarily caused low water.

Under the work now in progress the whole entrance will be deepened, the harbour eularged, and additional protection works will be built.

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.
Department of Marine and Fisheries, Ottawa, Canada, 13th June, 1900.

☞ All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

Pilots, masters or others interested are earnestly requested to send information of dangers, changes in aids to navigation, notices of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Chief Engineer, Department of Marine and Fisheries, Ottawa, Canada.

NAMES AND PRICES OF THE YACHTS BOUGHT DURING SPANISH-AMERICAN WARTIME.

	Government Name of Yacht.	Former Name of Yacht.	Name of Owner	Price Paid.	Length.	Gross Tonnage.	Bunker Capacity.
1	Aileen	Aileen	Richard Stevens	$ 55,000	120	151	45
2	Dorothea	Dorothea	Thomas McKean estate	187,500	182	433	90
3	Eagle	Almy	Frederick Gallitin	110,000	155	364	85
4	Elfrida	Elfrida	Dr. Seward Webb	50,000	102	122	23
5	Enquirer	Enquirer	W. J. Conners	80,000	130	144	18
6	Frolic	Comanche	H. M. Hanna	115,000	165	357	100
7	Gloucester	Corsair	Pierpont Morgan	225,000	204	561	120
8	Hawk	Hermione	H. L. Pierce estate	50,000	145	270	70
9	Hist	Thespia	David Dows, Jr.	65,000	174	312	60
10	Hornet	Alicia	Henry M. Flagler	117,500	160	301	65
11	Huntress	Huntress	F. C. Fowler	25,000	97	85	17
12	Kanawha	Kanawha	John P. Duncan	50,000	114	126	20
13	Inca	Inca	Frank B. McQuestin	35,000	96	94	25
14	Mayflower	Mayflower	Ogden Goelet estate	430,000	273	1800	584
15	Oneida	Illawara	Eugene Tompkins	60,000	110	118	20
16	Restless	Restless	Hiram W. Sidney	29,000	113	104	16
17	Scorpion	Sovereign	M. C. D. Borden	300,000	210	627	200
18	Shearwater	Shearwater	Henry R. Wolcott	26,000	108	109	...
19	Siren	Eugenia	J. G. Cassatt	40,000	123	102	45
20	Stranger	Stranger	Mrs. Mary Lewis	75,000	173	247	50
21	Sylph	No. 295	John Roach & Co.	50,000	123	172	47
22	Sylvia	Sylvia	Edward M. Broun	25,000	130	136	60
23	Viking	Viking	Horace A. Hutchins	30,000	125	141	40
24	Vixen	Josephine	T. A. B. Widener	150,000	182	545	190
25	Wasp	Columbia	J. H. Ladew	95,000	180	380	108
26	Yankton	Penlope	H. E. Converse	125,000	185	541	170
			Total	$2,600,000			

Admiralty Jurisdiction—Suit Between Foreigners—Effect of Assignment of Claim.—Where a court of admiraliy, in the exercise of its discretion, has refused to entertain jurisdiction of a suit between foreigners for the breach of a contract of carriage made in Canada, and no part of which was to be performed within the United States, it appearing that the controversy could more properly be determined by the courts of Canada, by the laws of which the contract was governed, it is not required to entertain a second suit on the same cause of action by an assignee of the former libelant, who is a citizen and resident of the district where the suit is brought, when the assignment was merely colorable, and made for the purpose of enabling the suit to be brought in such court. Goldman vs. Furness, Withy & Co., Limited, 101 Fed. Rep. (U. S.) 467.

THE STEAMBOAT INSPECTION SERVICE AGAIN AT LOGGERHEADS WITH PRACTICAL STEAMBOATMEN.

The Secretary of the Treasury ought to kick out that "kettle of fish" ycleped, the U. S. Supervising Inspectors of Steamboats. The head of the service seems to do everything wrong, like any other old incompetent.

The latest is from the Waterways Journal, St. Louis, Mo., and reads as follows:

We have sent copies of the following circular, together with the petition to which it refers, to many boats and boat owners on the western and southern rivers this week, and we would respectfully request any who may have been overlooked to forward their names to this office for copies. Several boat owners have received a number of the petitions, which we trust they will circulate on their various boats for signatures. The numerous pilot associations have also been provided with these petitions:

To Steamboat Owners: Inclosed you will find a petition that we respectfully ask you to circulate among your passengers as extensively as possible for signatures. This petition is now on nearly all the packets, and is of an important nature—that of the repeal of the recent pilot-house ruling prohibiting passengers from entering the pilot-house in daylight, which in reality was always in force, but left to the discretion of local inspectors and masters of packets. You are probably aware that this ruling is a hardship on packets that carry pleasure seekers, and can only be eliminated by the active and concerted action of all packet owners, masters and the public at large.

Kindly add sheets for signatures as occasion may require and circulate them until November 1, after which they should be forwarded to this office and will then accompany a delegation of steamboatmen to Washington, D. C., at the next Supervising Inspector's convention.

The securing of as many signatures as possible is desired, as we expect satisfactory results only in this manner.

Kindly give this matter your attention and oblige,

THE WATERWAYS JOURNAL, Per WM. ARSTE, Pub.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	1,741,000	839,000	235,000	84,000	410,000
Chicago	10,701,000	3,378,000	1,353,000	350,000	.....
Detroit	158,000	24,000	4,000	5,000	.....
Duluth	12,414,000	415,000	414,000	18,000	38,000
Fort William, Ont.	1,637,000	.....	.....	.....	.....
Milwaukee	304,000	.....	.....	.....	2,000
Port Arthur, Ont.	81,000	.....	.....	.....	.....
Toledo	231,000	279,000	237,000	2,000	.....
Toronto	52,000	.....	11,000	.....	19,000
On Canals	158,000	662,000	186,000	25,000	77,000
On Lakes	341,000	3,132,000	531,000	25,000	.....
On Miss. River	.....	.....	.....	.....	.....
Grand Total	45,524,000	12,162,000	5,838,000	787,000	731,000
Corresponding Date, 1899	28,843,000	13,105,000	5,907,000	865,000	1,303,000
Increase	1,348,000	932,000	.....	.....	.....
Decrease	.....	.....	53,000	139,000	39,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD).

Duty of Sailing Vessel.—A sailing vessel, on meeting a tug, with a tow, is bound to keep her course, that the tug may not be misled in taking measures to avoid collision. The Isaac H. Tillyer, 101 Fed Rep. (U. S.) 478.

Collision—Steam and Sail Vessels Meeting—Duty of Tug with Tow.—It is the duty of a tug with a tow, on meeting a sailing vessel, to take all necessary precautions to keep both tug and tow out of her way, and where, by reason of its length, the tow is unweildy, the care required is correspondingly greater. The Isaac H. Tillyer, 101 Fed. Rep. (U. S.) 478.

Fellow Servants.—A longshoreman employed in unloading a ship, and the servants aboard ship, having charge of the ship's supplies, are not fellow servants, within the rule precluding recovery for a personal injury sustained through the negligence of a fellow servant. Sansol vs. Compagnie Generale Trans-Atlantique. 101 Fed. Rep. (U. S.) 390.

Damages Recovered for Collision—Priority of Claims to Fund.—The right of subrogation of an insurer, who has paid a policy on account of a collision, to a fund recovered from the wrong-doer, is subordinate to the rights of damage claimants against the injured vessel, growing out of the collision, where she has been surrendered by the owner in proceedings for limitation of liability. The St. Johns, 101 Fed. Rep. (U. S.) 469.

Marine Insurance—Abandonment of Vessel to Insurer.—The collection from an insurance company of the full amount at which a vessel was valued in the policy, on account of injury by collision, does not import an abandonment of the vessel by the owners to the insurer, where she was undervalued in the policy, and the owners refused to abandon. Abandonment must be the voluntary act of the insured. The St. Johns, 101 Fed. Rep. (U. S.) 469.

Shipping—Contract for Cargo Space—Connecting Lines.—An engagement of cargo space on a steamship line for a shipment of cotton, made by a company operating a connecting line, constitutes a contract which binds the latter to furnish the cargo or respond in damages, although it was in fact made on behalf of a shipper intending to make a through shipment over both lines, where such fact was not disclosed. Patterson et al. vs. Baltimore Steam Packet Co., 101 Fed. Rep. (U. S.) 296.

Faults—Facts Considered.—A schooner came in collision with the second of three barges in tow of a tug on a single line, the whole extending a length of 3,300 feet. The vessels met on nearly parallel courses, and came within sight of each other when two miles apart. The schooner was sailing closehauled, and the tug passed to the leeward of her at a distance of about 300 feet. The schooner held her course, but, owing to her leeway, passed the first barge at a distance of not more than 75 feet, and came in collision with the second. Held, that the schooner was not in fault for holding her course, but that the tug and the barge were both in fault for the collision,—the former for not changing her course so as to pass with her tow to the windward of the schooner, which she could readily have done; and the latter because, when the schooner passed so close to the first barge, which was 160 fathoms in front, she must have known, if she kept a proper lookout, that the tug had placed her in a position where collision was inevitable, if she kept her course, and should have cut her hawser, and by using her helm sheered out of danger. The Isaac H. Tillyer, 101 Fed. Rep. (U. S.) 478.

Valued Policy—Conclusiveness on Parties.—Where a vessel is valued in a marine policy, neither party can be heard to allege a different valuation, whereby the rights, remedies, or liabilities of either can be prejudiced; and, on payment by the insurer of the full amount of such valuation on account of the loss of the vessel by collision, the owner cannot allege a larger valuation, uncovered by insurance, for the purpose of entitling him, as constructive insurer of such uninsured excess, to a fund recovered from the wrongdoer, to which the insurer would otherwise be entitled by subrogation. The St. Johns, 101 Fed. Rep. (U. S.) 469.

Action to Recover Deficit.—In an action to recover a deficit resulting from voyages of a bark, evidence is admissible of a custom of a port of Boston for ships's husbands to make advances for disbursing vessels managed by them, and credit interest on all sums received by them from the date of the receipt, and debit interest on all sums paid out by them from the date of payment, where there is an implied agreement between plaintiffs and defendants that plaintiffs should so charge and allow interest, as it is competent for parties to agree to pay interest on a running account, which agreement may be proved by evidence of the custom known to the parties. Smith et al. vs. Butler et al., 57 N. E. Rep. (Mass.) 322.

Interest Charged by Ship's Husband.—In an action to recover a deficit resulting from a voyage of a bark, where interest is charged by the ship's husband on all sums of money received from date of receipt, and interest debited on all sums paid out from date of payment, when the amount received by plaintiffs in each year and credited and duly applied to the account with the owners of vessels exceeds the interest charge for that year, such charge, being the balance of interest charged on the items of each side of the account for the year in question, was paid, and the charge for each year following was on a new principal, less than the interest, in contravention of Pub. St. c. 77, § 3, providing that no greater rate of interest than 6 per cent should be charged unless the agreement to pay such greater rate is in writing. Smith et al. vs. Butler et al., 57 N. E. Rep. (Mass.) 322.

Contract with Owner—Presumption.—Libelant, by direction of a corporation as owner, undertook the repairing of a vessel at New York, where the contract was made, and where the corporation had its office, and transacted all of its business, although it was incorporated under the laws of another state, of which fact libelant had no knowledge. Held, that the presumption was, under such circumstances, that the contract was made upon the general credit of the corporation, and that the burden rested upon the libelant, in order to establish a maritime lien, to prove an agreement or a common understanding between the parties that the work was to be done on the credit of the vessel. The Roanoke, 101 Fed. Rep. (U. S.) 298.

Charter Party—Stranding—Negligence of Owner—General Average.—A ship in good condition, and in every way fit for the proposed voyage, started for Pensacola with a cargo of timber. She drew 23 feet, six inches less than her full laden draft. When she reached the bar 9 miles below Pensacola the water was 24 feet deep. The channel was narrow and tortuous—shaped like the letter "S." A cross current struck her. She was near the bottom, did not follow the helm, and grounded. Similar accidents often happened at the same place, and were not preventable. Held, that the stranding was not caused by negligence of owner or unseaworthiness of ship, so as to relieve the owner of the cargo from liability, under a general average adjustment, for proportion of expenses incurred in getting the vessel afloat. Magdala S. S. Co. vs. H. Baars Co., 101 Fed. Rep. (U. S.) 303.

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T. H. NEWMAN, Manager Cleveland & Buffalo Transit Co., Cleveland, Ohio.
SPITZER & CO., Bankers, Spitzer Building, Toledo, Ohio.
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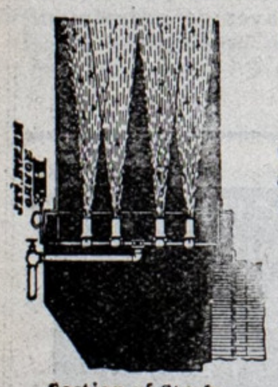

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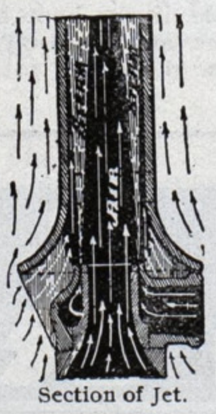

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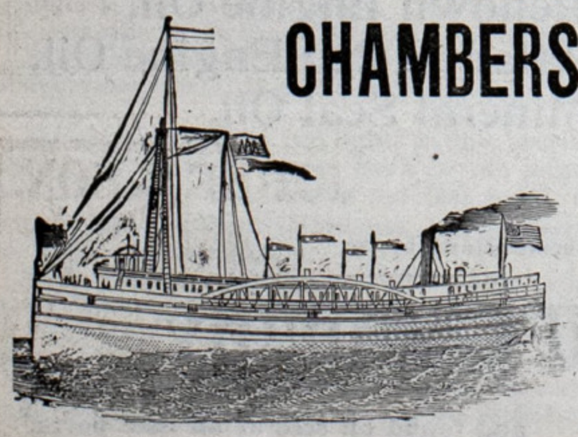

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Government Proposals.

U. S. ENGINEER OFFICE, Buffalo, N. Y., June 20, 1900. Sealed proposals for construction of concrete superstructure on south pier at Buffalo, N. Y., will be received here until 11 a. m., July 10, 1900, and then publicly opened. Information furnished on application. T. W. SYMONS, Major, Engrs. 25-27

U. S. ENGINEER OFFICE, Galveston, Tex., May 30, 1900. Sealed bids in triplicate for improving Galveston Ship Channel and Buffalo Bayou, Tex., by dredging, etc., will be received until 2 p. m., June 30, 1900, and then publicly opened. For information apply to C. S. RICHE, Capt., Engrs. 22-25

PROPOSALS will be received at the office of the Light-House Engineer, San Francisco, Cal., until noon on July 5, 1900, for the construction and delivery f. o. b. in San Francisco, of the metal work of a fourth-order lantern, for Point Arguello Light-Station, Cal. Specifications, drawings and full information relative to the work can be obtained on application to this office. CHAS. E. L. B. DAVIS, Major, Corps of Engineers, U. S. A., Engineer 12th Light House District. 23-25

U. S. ENGINEER OFFICE, Jones Building, Detroit, Mich., June 20, 1900. Sealed proposals for dredging Rouge River, Mich., and Black River at Port Huron, Mich., will be received here until 12 noon (standard time), Jnue 30, 1900, and then publicly opened. Information furnished on application. G. J. LYDECKER, Lt. Col., Engrs. 26

TREASURY DEPARTMENT, Office of General Superintendent U. S. Life-Saving Service, Washington, D. C., June 18, 1900. Sealed proposals will be received at this office until 2 o'clock p. m. of Thursday, the 12th day of July, 1900, and then publicly opened for furnishing supplies required for use of the Life-Saving Service for the fiscal year ending June 30, 1901; the supplies to be delivered at such points in New York City, Grand Haven, Mich., and San Francisco, Cal., as may be required, and in the quantities named in the specifications. The supplies needed consist of beds and bedding, blocks and sheaves, cordage, crockery, furniture, hardware, lamps, lanterns, etc.; lumber, medicines, etc.; paints, oils, etc.; ship chandlery, stoves, etc.; tools, and miscellaneous articles; all of which are enumerated in the specifications attached to the form of bid, etc., which may be obtained upon application to this office, or to the Inspector of Life-Saving Stations, 17 State street, New York City; Superintendent Eleventh Life-Saving District, Grand Haven, Mich.; and Superintendent Twelfth Life Saving District, New Appraisers' stores, San Francisco, Cal. Envelopes containing proposals should be addressed to the "General Superintendent U. S. Life-Saving Service, Washington, D. C.," and marked on the outside "Proposal for Annual Supplies." The right is reserved to reject any or all bids, and to waive defects, if deemed for the interests of the government.

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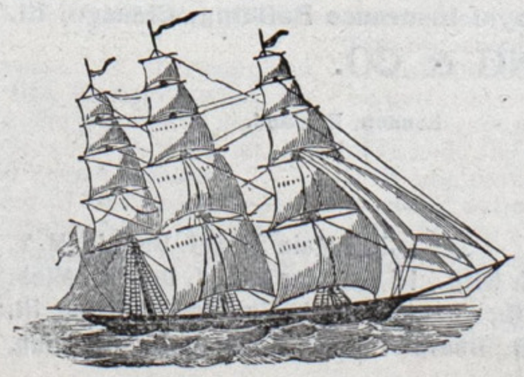

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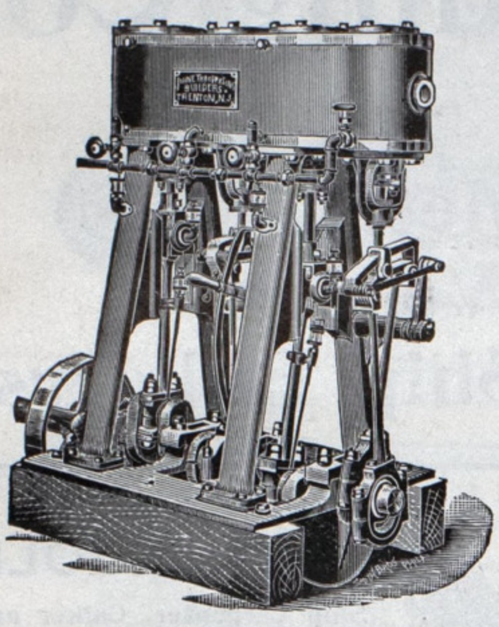

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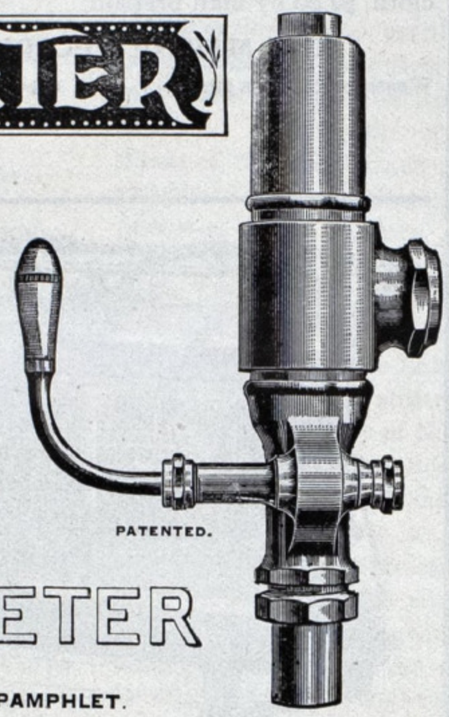

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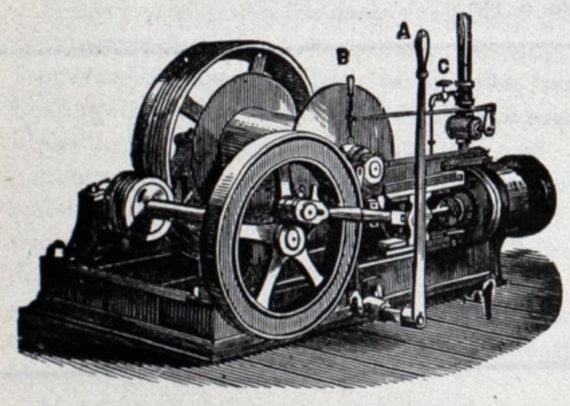

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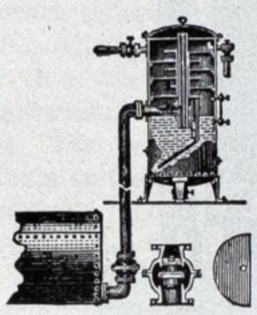

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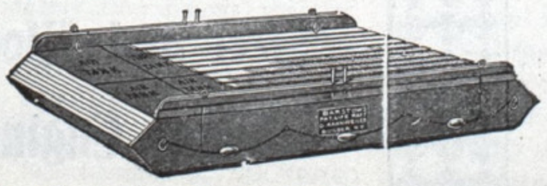

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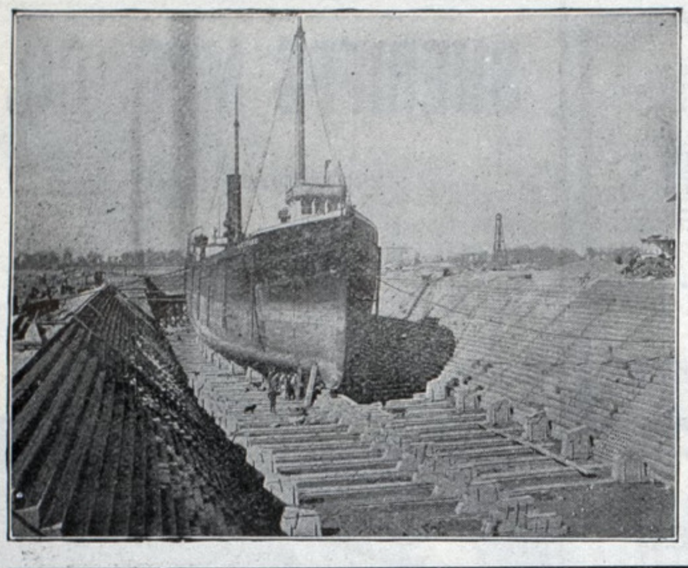

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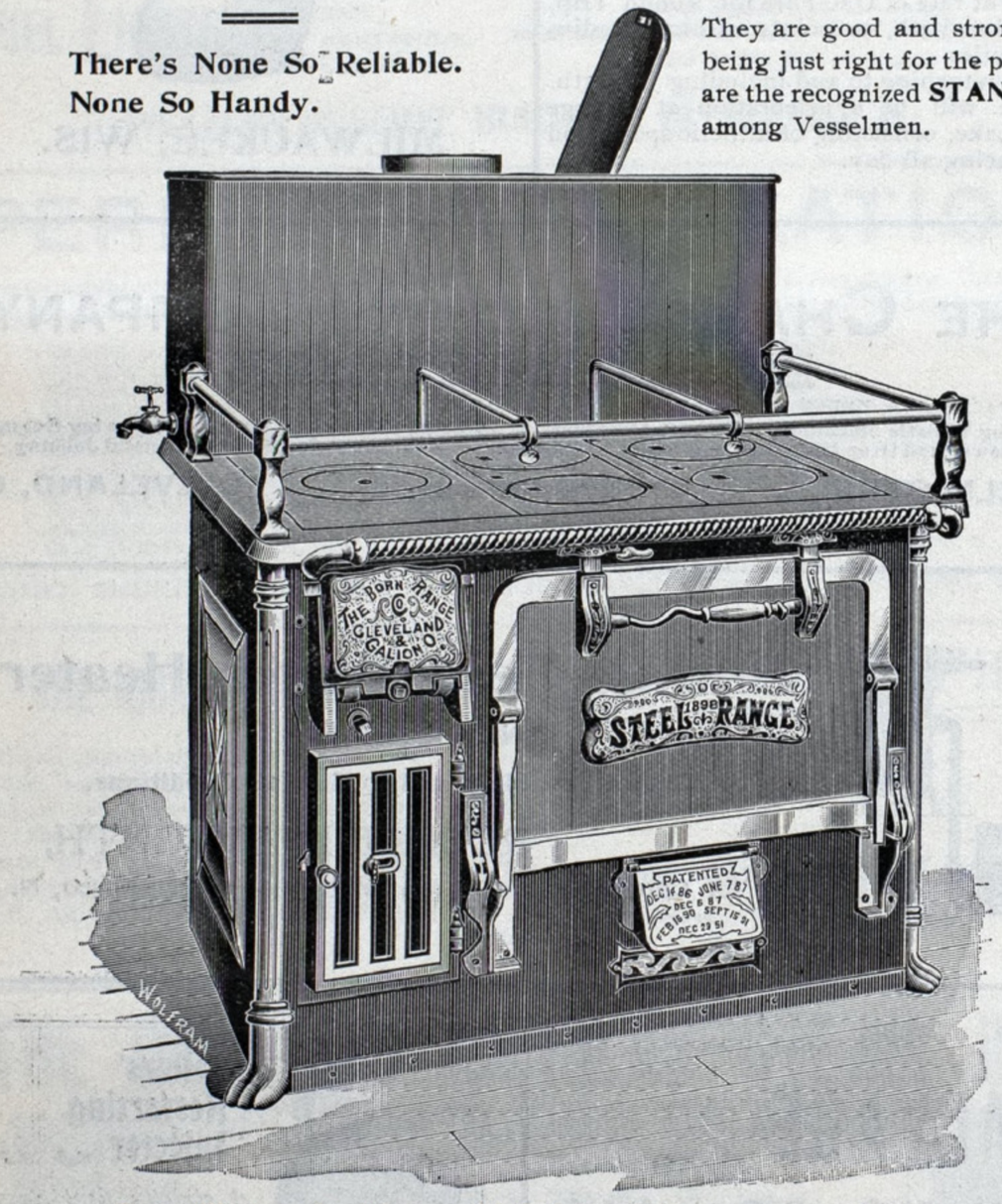

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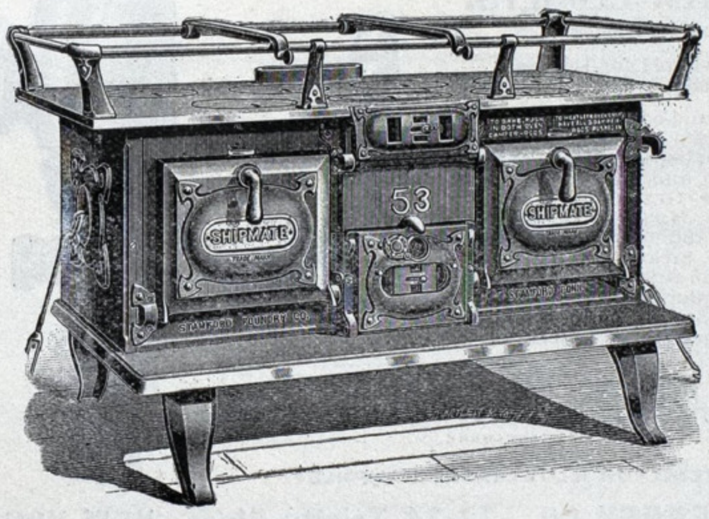

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